Journal of Consulting and Clinical Psychology
1989, Vol. 57, No. 6, 747-755

0022-006X/89/$00.75

Psychological Effects of Participation in a Large Group Awareness Training

Jeffrey D. Fisher
University of Connecticut

Roxane Cohen Silver
University of Waterloo

Jack M. Chinsky
University of Connecticut

Barry Goff, Yechiel Klar, and Cyndi Zagieboylo
University of Connecticut

A study was designed to assess the psychological effects of participation in an intervention that has been classified as a large group awareness training (LGAT). One hundred and thirty-five participants in the Forum (the successor to the *est* training and at present the most widespread LGAT) and 73 comparable peer-nominated control Ss completed detailed questionnaires approximately 4–6 weeks pre- and 4–6 weeks posttraining. Participants and nominees also completed similar measures approximately 1¼ years later. Both Forum participants and nominees were men and women who were predominantly White, well educated, and of relatively high socioeconomic status. Forum outcome was assessed on a broad array of outcome dimensions (perceived control, life satisfaction, daily coping, social functioning, positive and negative affect, self-esteem, physical health, and symptomatology), using multivariate techniques. The short-term outcome analyses revealed that only perceived control was affected by Forum participation, and no long-term treatment effects were observed. Results suggest that claims about far-reaching positive or negative psychological effects of participation in LGATs such as the Forum may be exaggerated.

The term *Large Group Awareness Training* (LGAT) has been applied to a number of different "enhancement-based" interventions (e.g., *est*, Lifespring) (Finkelstein, Wenegrat, & Yalom, 1982). These interventions were introduced in the early 1970s and have attracted more than a million participants since then. They are offered to the general public by profit-making organizations outside the mental health community, and their founders are typically individuals with little recognized professional or academic background in psychology. LGATs generally focus on philosophical, psychological, and ethical issues related to personal effectiveness, decision making, personal responsibility, and commitment. These issues are examined through lectures, demonstrations, dialogue with participants, structured exercises, and participants' testimonials of personal experiences relevant to the themes presented. Participants are encouraged to apply the insights they obtain to improving their own lives. This is assumed not only to help them resolve existing problems but also to increase personal satisfaction and productivity (for more specific information on LGATs, see Emery, 1977; Erhard & Gioscia, 1977; Finkelstein et al., 1982; and Winstow, 1986).[1]

Since their initiation, LGATs have been the subject of much controversy. While LGAT supporters argue that such interventions are vehicles for personal growth and societal change and are a cost-effective means of introducing beneficial therapeutic messages to large audiences (Berger, 1977; Erhard & Gioscia, 1978; Shaw, 1977), others view them as a hazardous and irresponsible use of powerful psychological principles and psychotherapeutic procedures (see, e.g., Brewer, 1975; Rome, 1977). Opponents posit that LGAT participation may lead to psychological disturbances (Fenwick, 1976; Haakan & Adams, 1983),

This research was supported by Mixed Sources Grant 1171-000-11-00215-14-626 to the University of Connecticut.

The authors would like to thank Werner Erhard and Associates, who permitted the researchers access to the Forum subject population and under whose auspices the funds for conducting this study were provided. This program of research was conducted under a formal agreement between Werner Erhard and Associates and the researchers, dated May 6, 1985, guaranteeing the researchers complete independence in every phase of the project. We also wish to express our appreciation to Thomas Malloy for his statistical consultation. In addition, Ellen Amore, Lis Cade, Rena Epstein, Robert Green, Diane Kimble, Jack Mantos, Donald Meichenbaum, Richard Mendola, Amy Reichard, Ann Sharp, Patty Sivo, and Carol Valone are acknowledged for the important role they played in various phases of the research.

Roxane Cohen Silver is now at the Program in Social Ecology, University of California, Irvine; Barry Goff is with the Human Interface Group, Hartford, Connecticut; and Yechiel Klar is now at the Department of Psychology, University of Kansas, Lawrence.

Correspondence concerning this article should be addressed to Jeffrey D. Fisher, The University of Connecticut, U-20, Room 107, 406 Babbidge Road, Storrs, Connecticut 06269-1020.

[1] Although psychologists have often classified LGATs as a generic group (cf. Finkelstein, Wenegrat, & Yalom, 1982) and although this classification does have considerable heuristic value, it must be kept in mind that each of these interventions is unique.

and some fear that these groups are a means of mass exploitation (Cinnamon & Farson, 1979; Conway & Siegelman, 1978).

Whether LGATs are harmful or beneficial to clients can be assessed empirically. Unfortunately, past empirical work has been scarce overall, and a review of the LGAT outcome research that has been conducted reveals a number of problems: (a) the lack of an adequate control group in most studies; (b) designs that do not employ pre–post comparisons of objective, standardized measures; and (c) methodologies that are likely to elicit response bias. In addition, most research has focused on only a limited range of possible LGAT outcomes. Overall, these limitations preclude any reliable empirical conclusions about the effect of LGAT.

Finkelstein et al. (1982) have argued for conducting additional, methodologically stronger, LGAT outcome research. They indicate that in addition to addressing the issue of whether LGAT participation is harmful or beneficial, such work would be important because the popularity of LGATs indicates that many people's needs are being met "neither by society nor by the traditional psychotherapy disciplines" (p. 517), many therapists will treat clients who have been through such trainings or who will become involved in them during their therapy, and such research may suggest useful techniques that could be incorporated into more traditional therapies or that might help to develop certain aspects of personality theory. Methodologically sophisticated research on LGATs may also offer a contribution to social, clinical, and community psychology. It could address such classic concerns as social influence processes (Cialdini, 1984), group dynamics (Zander, 1985), and the formation and functioning of social support systems (Gottlieb, 1988) and could contribute to understanding the factors associated with personal change (Beit-Hallahmi, 1987; Zilbergeld, 1983).

The focus of this study was to evaluate the outcome of participating in the Forum, an intervention considered to be an LGAT. As the successor to the *est* training, the Forum has attracted a significant number of participants since it was introduced in the mid 1980s and has been viewed by some as a prototype of LGATs of the mid- and late 1980s (for a description of the Forum, see Winstow, 1986). We sought to ameliorate the methodological problems inherent in previous LGAT outcome studies (a) by including an appropriate, comparable control group; (b) by using statistical procedures (i.e., structural equation models) that make it possible to distinguish the effect of Forum participation from any initial differences that may be present between participants and controls; (c) by utilizing a pre–post design and objective, standardized measures; (d) by employing a context that disassociated the outcome study from the LGAT intervention (to make biased responses less likely); and (e) by employing a multidimensional approach to outcome assessment.

Method

Design, Subjects, and Procedure

A quasi-experimental, nonequivalent control group design (Cook & Campbell, 1979; Judd & Kenny, 1981) was employed. Individuals who participated in one of several selected Forum trainings constituted the experimental group. A nonequivalent control group consisting of "peer nominees" (Sharp, 1985) who had not taken an LGAT was created by asking prospective Forum participants who agreed to take part in the study to suggest other individuals for participation in the research. Nominees were to be of the same sex and approximate age and from the same community, individuals whom the participant considered to be "like" him- or herself. Forum participants were asked not to nominate their best friend or anyone from the same household. Study participants in the Forum and nominee control groups had an average age of 32.4 years and were predominantly well-educated individuals of relatively high socioeconomic status. The sample of Forum participants was 40% male and 60% female and was 91.7% White, 3% Black, 2.3% Hispanic, and 3% other. The nominee control group comprised 31.5% men and 68.5% women and was 97.2% White and 2.8% Black.

To measure Forum outcome, Forum participants and control subjects were assessed at several points in time. The first set of measures was administered approximately 4–6 weeks pre-Forum to obtain a baseline for all the variables under study. A second set of measures was administered 4–6 weeks post-Forum to assess the short-term effects of Forum participation. To control for possible effects of pretesting on treatment or subsequent measurements, two thirds of the Forum subjects were randomly assigned to receive both the pre- and posttest measures, whereas the other third received only the posttest measures. The former subjects were referred to as Group 1, the latter as Group 2. (When the posttest scores of both groups were compared to assess any possible effects of pretesting, no systematic differences were found between the two groups.) Finally, all subjects were approached to complete a third measurement approximately 1½ years after Forum participation to evaluate its long-term effects.

Contacting the experimental group. The initial contact between the researchers and potential Forum participants in the study occurred between August and December 1985. During this interval, a letter from the researchers was included in the registration packets of all Forum registrants in a large city in the northeastern United States. The letter indicated that a study was being conducted on the quality of life in North America by investigators from the University of Connecticut and the University of Waterloo in Canada. Individuals were told that we were contacting a representative cross-section of people for our research and that among the segments of the population to be included in the study, individuals participating in large group awareness trainings would be represented. Prospective subjects were told that the purpose of the research was "to contribute to an understanding of some factors affecting the quality of people's lives. People will be asked how they have been feeling lately, how they spend their free time, and the impact of various life experiences." The context for the research was thus almost entirely dissociated from the LGAT intervention.

Potential subjects were promised anonymity and confidentiality, and it was stressed that participation was voluntary. Individuals who preferred not to be contacted for the research were asked to mail an enclosed, stamped, self-addressed postcard to the Forum organization indicating that their name should not be released to our research team. Researchers telephoned those individuals who made themselves available for contact no later than 6 weeks prior to the Forum for which they had registered and asked whether or not they would be willing to participate in the study by completing questionnaires on two separate occasions (or only one occasion in the case of Group 2). Prospective subjects were informed that the questionnaires would take 45–60 min to complete and were told that they would receive $15 for their overall participation. Those Forum registrants available for contact were asked to complete the questionnaire by dates that were 4 weeks pre-Forum (for Group 1) and 6 weeks post-Forum (for Groups 1 and 2). To ensure a sufficient number of experimental subjects, participants for the study were recruited from several succeeding Forums. We used identical procedures for each successive group.

To be eligible for inclusion in the research, experimental subjects had

to have registered for the Forum at least 6 weeks prior to the one under study, to have been contacted by telephone by our research team at least 4 weeks prior to the Forum, to have paid the Forum registration fee, to have never previously attended the Forum or *est*, and to have actually attended the Forum in its entirety (across two weekend sessions).

Six hundred eight-five registrants received letters describing our study. Approximately one third (n = 224) either returned postcards to the Forum organization indicating that they did not wish to be contacted by the research team or refused to participate when called. An additional 151 prospective participants could not be reached by telephone by a member of our research team within the period of eligibility, despite at least two, and often several, attempts.

Thus, a pool of 310 Forum registrants agreed by phone to complete questionnaire packets.[2,3] Of these, 107 ultimately did not meet our requirements for eligibility.[4] Forty-nine eligible subjects did not return one or more of the pre- or posttest packets within the designated time frames, despite our mailing reminders at 5- and 10-day intervals and a telephone call 10 days postmailing. Overall, 83 individuals in Group 1 completed and returned pre- and posttest measures, and 52 in Group 2 completed posttest measures.

Contacting the nominees. The nominees (Group 3) were contacted initially by mail, given a similar description of the study as Forum registrants, and offered the same payment. Letters were mailed to 244 nominees, of which 32 refused to participate and 59 could not be reached during the designated time frame, despite at least two, and often several, attempts. One hundred and fifty-three nominees were mailed questionnaires. Of this group, 22 were excluded because of prior LGAT experience. Seventy-three of the remaining potential respondents returned pre- and posttest packets within the period of eligibility.[5] The timing of nominee assessments was yoked to the pre- and posttests of Forum subjects.

The 1½-year follow-up study. Forum participants and nominees who indicated at the time of the posttest that they would be willing to take part in further research were recontacted approximately a year and a half later and offered $10 to participate in a follow-up study. Changes of residence, refusals, and noncompletions reduced the number of participants to 76 Forum subjects and 46 nominees.

Instruments

Before selecting the dimensions to be included in the questionnaire, hypotheses were generated about the domains most apt to be influenced by Forum involvement that could be measured by standardized, paper and pencil, psychological instruments. Input was solicited from social and clinical psychologists, Forum trainers and staff members, and others who had experience with programs such as the Forum. The existing LGAT literature also provided useful information. The consensus that emerged was that we would assess the effect of Forum participation on the experience of positive and negative affective states, health, psychological symptomatology, perceived control, social functioning, life satisfaction, self-esteem, and daily coping.

Experience of Positive and Negative Affective States

Affects Balance Scale (ABS). The ABS (Derogatis, 1975) was used to assess positive and negative affect. Subjects indicated the frequency with which they had experienced each of four positive and four negative emotional states during the previous week. Separate constructs were created to reflect positive and negative affect. In addition, the *intensity* and *duration* of positive and negative affective states were measured. Separate internal consistencies were calculated for overall positive affect and intensity and duration of positive affect and for negative affect and intensity and duration of negative affect. The average alpha was .70.

Health

General health measure. The subjects' health was measured on a 26-item instrument devised for the current study. Besides assessing the frequency of visiting medical professionals, the instrument asked people to rate their health compared with that of others. It also provided an index of the amount of restriction in activity they had experienced due to physical health. Internal consistency was .75 in a pilot study. In addition, a four-item subjective measure of sleep quality was included, the internal consistency of which was .80 in the pilot.

Psychological Symptomatology

Brief Symptom Inventory (BSI). The BSI (Derogatis & Melisaratos, 1983) provides a measure of an individual's subjective distress. It has been validated as a fully adequate substitute for the widely used SCL-90 (Derogatis, 1977; Derogatis & Spencer, 1982). The BSI was divided for the current research into three measurement constructs: Symptomatology A (depression and hostility), Symptomatology B (anxiety, obsessive–compulsiveness, and phobic anxiety), and Symptomatology C (psychoticism and paranoid ideation). This division was corroborated by a confirmatory factor analysis.

Perceived Control

Locus of control scale (I-E). A shortened version of the I-E scale (Rotter, 1966) was employed as a general measure of locus of control. The

---

[2] Comparisons were conducted between those Forum participants who agreed to participate and all other Forum participants in the same geographic area during the same time period to look for indications of selective participation. The following variables were compared: (a) number of hours in Forum-related activities *after* the completion of the Forum (a measure of involvement in the Forum), (b) family status (i.e., being married, single, divorced, or separated at the beginning of the Forum), (c) education level, and (d) income level. These comparisons yielded no significant differences between the two groups. Thus, on the basis of this data there is no reason to assume that Forum participants who agreed to participate in our research were significantly different from Forum participants overall.

[3] Originally the study was designed to include a randomly assigned, waiting-list control group, in addition to the peer-nominee control group. However, it readily became clear that the waiting-list procedure was not an effective method for randomly assigning subjects to conditions. Many subjects were aware of the dates the Forum was to take place and insisted on participating in the next available session, rather than waiting. To avoid credibility problems and the loss of potential participants, Forum registrars were instructed not to argue or to try to persuade such applicants to enroll in the later Forum. Enrollment of subjects in the waiting-list control group was terminated as soon as it became clear that it would not be a viable group. Although 19 subjects initially agreed to participate in this condition before it was discontinued, they were dropped from the study because they constituted a number too small to serve as a reliable comparison group.

[4] Of the subjects who were ineligible for inclusion, 72 dropped out of the Forum, 21 transferred to a later Forum, and 14 had previously participated in the Forum or *est*.

[5] Refusals to participate occurred in somewhat different ways for experimental subjects and nominees. The rate of direct refusals (by mail or phone) was greater for the experimental (i.e., Forum) group than for the nominees. On the other hand, nominees, more than experimental subjects, tended indirectly to refuse to participate by not returning the first questionnaire. Nevertheless, as will be discussed later, Forum participants and nominees who completed the first questionnaire were highly comparable.

shortened version contained 14 forced-choice pairs, retaining the format of the original instrument. Internal consistency for our sample averaged .70, similar to that reported by Rotter.

Health Locus of Control scale (HLCS). The HLCS is an 11-item scale used to assess individuals' beliefs concerning who controls the state of their health, themselves or an outside force. Its reliability and validity are discussed in Wallston, Wallston, Kaplan, and Maides (1976).

Social Functioning

The Norbeck Social Support Questionnaire (NSSQ). A modified NSSQ was used as a multidimensional measure of social support. Respondents listed others who were important to them and indicated the length of acquaintance, the frequency of contact, the degree of satisfaction with the relationship, and the amount of support received from the individual. The reliability and validity of this instrument are described in Norbeck, Lindsey, and Carrieri (1981, 1983).

The social density scale. This scale was adapted from Hirsch's Social Network Questionnaire and used to measure the level of interaction among the people in a subject's social network. For a discussion of its validity, see Hirsch (1979, 1980). The test–posttest correlation, with a 2-month interval, was found to be .55.

Life Satisfaction

The satisfaction-with-life scale. This scale was created to measure subjects' satisfaction with various aspects of life. It was based on a shorter scale developed and validated by Andrews and Crandall (1976). The new scale contained a list of 15 life domains (e.g., "my love relationship or marriage," "my financial situation"). Responses to each item were scored on a 7-point scale ranging from *delighted* to *terrible*, and internal consistency was .90.

Self-Esteem

Self-Esteem Inventory (SEI). Self-esteem was assessed employing the 10-item scale developed by Rosenberg (1965). Items refer to subjects' agreement or disagreement with statements about their self-worth (e.g., "At times, I think I am no good at all"). Detailed discussions about the reliability and validity of this measure appear in Robinson and Shaver (1973) and in Wylie (1974).

Daily Coping

The Daily Hassles Scale. This 7-item scale was developed by Wortman and Silver (1981) and used to examine the frequency of minor negative events (i.e., hassles) as well as minor positive events in the subject's life. Respondents were asked how often each of these types of events had occurred in the previous week, how much they were affected by them, and how much control they felt over them. Chronbach's alpha was .90 for the three negative items, .76 for the two positive items, and .86 for the two control items.

Perceived Occupational Stress Scale. This scale, developed by House, McMichael, Wells, Kaplan, and Landerman (1979), provides information about people's feelings and attitudes toward their work. It was modified to allow homemakers and students to respond. The major domains covered by the 20-item instrument are work satisfaction, job stress, conflict, and intrinsic motivation. The internal consistency for the subscales used ranged from .60 to .90 in a pilot study.

Other Measures

In addition to the above general outcome domains, several other instruments were included.

Marlowe-Crowne Social Desirability Scale. A shortened 12-item version of the Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1960) was used to measure response bias due to subjects' motivation to appear in a favorable light. The average Cronbach's alpha for the short form was .70.

Self-Consciousness Scale (SCS). The SCS is a 23-item measure that provides indices of three specific types of self-consciousness: (a) private self-consciousness, (b) public self-consciousness, and (c) social anxiety (Feningstein, Scheier, & Buss, 1975). Psychometric data are reported by Feningstein et al.

The attitudes toward self-improvement scale (ASIS). The ASIS is a 10-item scale designed for the present study to measure how strongly people believe in the utility of participating in self-awareness activities. The average Cronbach's alpha for the pre- and posttests was above .80. Test–retest reliability for tests administered 7 weeks apart was .78.

The Life Events Scale (LES). The LES (Sarason, Johnson, & Siegel, 1978) assesses subjects' life changes and their subjective impact at the time of the event. It includes a list of 47 common positive and negative life events. Subjects endorse those they have experienced in the past year (and in the current research, also in the last 5 years) and evaluate the impact at the time of occurrence. We also added an "impact now" measure in which subjects rated the present impact of each event endorsed. Psychometric data on the original LES are reported by Sarason et al.

The instructions on all of the measurement instruments were structured to be consistent with the quality-of-life theme of the program of research. No references to LGAT participation were made throughout the questionnaire packet.

Results

Preliminary Analyses

Comparability between groups. Demographic data collected at the pretest were used to assess the initial comparability of the peer-nominee control group and the experimental group. Results of chi-square analyses indicated that the two groups did not differ in their level of education or income, in race, or in the number of people in their household. However, prospective participants appeared to be less religious than nominees, $\chi^2(4, n = 208) = 11.68, p < .02$.

Of the 11 general outcome dimensions assessed in the study (i.e., positive affect; negative affect; health; psychological symptomatology A, B, and C; perceived control; social functioning; life satisfaction; self-esteem; and daily coping), multivariate structural equation modeling analyses revealed that there was significant nonequivalence between the groups on only two: perceived control and daily coping. Specifically, Forum participants reported a more internal locus of control and reported more daily hassles and work pressures and conflicts than did nominees. Additional univariate analyses of covariance of those measures included in the study that were not part of the 11 general outcome constructs revealed only two significant differences: Prospective Forum participants were initially more favorable toward self-awareness activities and tended to view negative life events during the last year as currently having greater impact. Overall, the demographic and psychological comparability between Forum participants and the nominee control group was substantial. Moreover, the statistical procedures employed in the subsequent analysis of Forum outcome controlled for any initial nonequivalence between the groups.

Effect of attrition. Another series of comparisons were made

between subjects who completed the various stages of the study (i.e., pre-, post-, and follow-up testing) and those who did not. A series of *t* tests that compared the pretests of the 83 experimental subjects in Group 1 who completed both the pre- and posttests and those who completed only the pretest ($n = 34$) revealed only four significant differences out of 138 comparisons. Parallel analyses between the 73 nominees who completed both sets of questionnaires and those who completed only the pretest ($n = 21$) yielded only two significant differences. A similar set of analyses were performed on the posttest scores of the 76 Forum participants who completed both the posttest and follow-up and those Forum participants who completed the posttest but not the follow-up ($n = 58$). Out of 83 possible comparisons, only two were significant. Similar analyses revealed no significant differences for the nominees who completed the posttest and the follow-up ($n = 46$) and those who did not ($n = 27$). These findings allow the conclusion that attrition both from pre- to posttest and from posttest to follow-up did not change the characteristics of the experimental and the control samples.

Gender differences. Initial analyses were performed to assess whether the 11 general outcome dimensions were influenced by gender. Fewer differences emerged than would be expected by chance. For this reason, gender will not be discussed further.

Analysis of the Data

Traditionally, estimation of treatment effects in the nonequivalent control group design has employed univariate analysis of covariance (i.e., regression adjustment) for each of the outcome variables (Campbell & Stanley, 1966). However, questions have been raised regarding whether the univariate technique is fully appropriate for such designs (see Cook & Campbell, 1979; Judd & Kenny, 1981; Lord, 1960; Reichardt, 1979). The problems associated with the univariate analysis of the nonequivalent control group design are handled most appropriately by implementing a multivariate analysis strategy (Judd & Kenny, 1981; Kenny, 1975, 1979). Therefore in this study multivariate analyses were employed where possible.

Eleven measurement models were specified and estimated to indicate the corresponding latent theoretical constructs that were represented in the outcome measures (i.e., positive affect; negative affect; health; psychological symptomatology A, B, and C; perceived control; social functioning; life satisfaction; self-esteem; and daily coping), and multiple indicators were used for each. These theoretical constructs were determined by clustering together related measures that tapped central dimensions on which the Forum was assumed to impact. For example, health locus of control, control over hassles and pleasant events, and locus of control were used to form an index of the control construct. (See Table 1 for a list of the 11 constructs that resulted and the variables used to indicate them.) Across the 11 constructs the average factor loading was .71, with a range of average loadings across constructs ranging from .61 to .84. This suggests that the indicators adequately measured the constructs they were designed to measure.

Analysis of short-term outcome. Structural equation modeling was used for the multivariate assessment of short-term treatment effects. Parameters of the structural models were estimated with Jöreskog and Sörbom's (1986) LISREL VI. Eleven identical structural equation models were specified to test the short-term effect of Forum participation (i.e., from pre- to posttest) on the 11 outcome domains. Each model included three structural variables: the treatment variable (i.e., Forum participant or nominee), the assignment variable (the "true" pretest score on a given construct), and the criterion variable (the "true" component of the posttest score on the same construct).

The structural model considers the true criterion variance to be a function of the true score on the assignment variable plus the effect of treatment, while controlling for the correlation between the treatment and assignment variables. In other words, it assesses whether or not there is a treatment effect after controlling for preexisting differences between the two groups. A general summary of the results of the 11 structural models testing the short-term effects of Forum participation is presented in Table 2. Included are estimates of the stability of the dimensions from pre- to posttest (Parameter b), of the nonequivalence of the treated and comparison groups on the pretest measures (Parameter c), and of the treatment effect (Parameter a). All the estimates are standardized.

Overall, results indicate that on all the dimensions, true scores (i.e., scores with error removed) remained stable from pre- to posttest. The stability estimate can be thought of as an estimate of measurement reliability over time. A significant treatment effect (at the .05 level) was evident only for the perceived control construct. This means that even when controlling for the fact that Forum participants had a more internal locus of control than nominees prior to the Forum, Forum participation strengthened this difference. No treatment effect was found on any of the other outcome dimensions.

In addition to the multivariate analyses, univariate analyses of covariance were conducted to assess the short-term treatment effects for the variables not incorporated in the 11 conceptual dimensions. For these variables, there were two posttest differences between the treatment and control groups. In comparison with controls, Forum participants experienced emotions for a shorter duration of time, $t(115) = 2.21, p < .03$, and were more in favor of self-awareness oriented activities, $t(152) = 3.42, p < .001$. Apart from these differences, there was substantial similarity between Forum and control subjects at the posttest. These univariate effects should be interpreted cautiously due to the inherent problems with these procedures and the number of tests performed.

Analysis of long-term outcome. A set of multivariate and additional univariate analyses similar to the short-term analyses were performed on the long-term (follow-up) data. The long-term models differed from the short-term ones in that the criterion variable was obtained from the follow-up assessment, and the 6-week posttest score was included as a potential mediator variable. Table 3 indicates the results of the 11 structural models measuring the long-term effects of Forum participation.

Inspection of Table 3 reveals that 10 of the 11 dimensions showed stability over time. The one that failed to show this pattern was the social functioning construct, which measures satisfaction with social relations. In view of the fact that reactions to one's social network fluctuate over time, this finding is not surprising. More important, Table 3 reveals that there were no

Table 1
Multivariate Constructs for the Causal Models

Positive affect construct	**Perceived control construct**
Positive Affect Balance score	Control over hassles and pleasant events
Intensity of positive emotions	Health Locus of Control score
Duration of positive emotions	Locus of control score
Negative affect construct	**Social functioning construct**
Negative Affect Balance score	Item from satisfaction-with-life scale on friends and social life
Intensity of negative emotions	Satisfaction with social support network
Duration of negative emotions	Total social functioning score
Health construct	**Life satisfaction construct**
Item from satisfaction-with-life scale on health	Item on Affects Balance Scale about feeling satisfied
General health score	Average score on satisfaction-with-life scale
Somatization score from BSI	Item about job satisfaction
Psychological symptomatology construct A (from BSI)	**Self-esteem construct**
Depression	Item on Affect Balance Scale about feeling worthless
Hostility	Self-Esteem Inventory score
Psychological symptomatology construct B (from BSI)	Esteem at work
Anxiety	**Daily coping construct**
Obsessive-compulsiveness	Conflict between work and other areas of life
Phobic anxiety	Coping with hassles
Psychological symptomatology construct C (from BSI)	Pressure at work
Psychoticism	
Paranoid ideation	

Note. BSI = Brief Symptom Inventory.

significant long-term multivariate treatment effects on any of the 11 general outcome measures. The effect for perceived control observed in the short-term multivariate analysis was not replicated in the long-term analysis.

In addition to the multivariate analyses, univariate analyses were performed to test for effects from the pretest to the long-term follow-up for those measures not included in the 11 conceptual dimensions. Neither of the short-term univariate treatment effects (i.e., for duration of affect or for attitudes toward self-awareness activities) were paralleled in the pre- to follow-up univariate analyses. On the other hand, three differences between participants and controls not evidenced in the short-term analyses were revealed in the long-term univariate analyses. Forum participants reported less social anxiety at the follow-up, $t(71) = 2.16$, $p < .04$, than nominees, as measured by the Self-Consciousness Scale. They also reported better sleep quality, $t(74) = 2.26$, $p < .03$, and they judged negative events in the past year, $t(75) = 2.26$, $p < .03$. Finally, at the follow-up, Forum participants reported fewer network members with whom they were in weekly contact, compared with nominees, $t(73) = 2.72$, $p < .01$.

Several of these effects, taken alone, would be consistent with some of what the Forum emphasizes (i.e., "processes" in the Forum are directed toward reducing social anxiety and coping with sleep problems). Overall, however, it is important not to read too much into these scattered univariate findings because of the total number of univariate analyses performed and the inherent problems with univariate analyses of the nonequivalent control group design.

Table 2
Summary of the Short-Term Structural Equation Models

Dimension	Stability estimate (b)	Nonequivalence estimate (c)	Treatment estimate (a)
Positive affect	.53*	.09	.06
Negative affect	.49*	−.17	.07
Health	.77*	−.12	.07
Symptomatology A	.54*	−.10	.10
Symptomatology B	.75*	−.12	.06
Symptomatology C	.65*	−.17	−.01
Perceived control	.84*	−.26*	−.19*
Social functioning	.61*	−.17	.07
Life satisfaction	.76*	.12	−.01
Self-esteem	.81*	−.00	.05
Daily coping	.75*	−.29*	.11

Note. An asterisk indicates a statistically significant effect at $p < .05$.

Discussion

The current study used multivariate structural equation modeling to assess the impact of Forum participation on a large array of outcome dimensions. This method failed to demonstrate any impact on all of the dimensions measured, with the exception of a *short-term* effect on perceived control.[6] In addition to being nonrobust in the long-term multivariate analysis, the perceived control findings should be viewed cautiously because of the similarity between the content of these measures and issues stressed in the Forum. The observed effects could be simply the result of learning a new set of convictions rather than

[6] Although the overall *long-term* multivariate analysis for perceived control failed to yield a significant effect (and thus there is some question about the appropriateness of reporting univariate effects), it is interesting to note that in parallel univariate analyses, two of the three indicators of control did reveal significant long-term effects.

Table 3
Summary of the Long-Term Structural Equation Models

Dimension	Stability estimate (a)	Stability estimate (b)	Nonequivalence estimate (c)	Treatment estimate (d)
Positive affect	.53*	.45*	.08	.00
Negative affect	.64*	.36*	−.24	−.09
Health	.82*	.70*	−.20	−.03
Symptomatology A	.66*	.45*	−.22*	−.04
Symptomatology B	.70*	.90*	−.12	−.01
Symptomatology C	.63*	.58*	−.05	−.03
Perceived control	.97*	.95*	−.44*	−.01
Social functioning	.61	.48	−.13	−.03
Life satisfaction	.89*	.82*	.10	.04
Self-esteem	.91*	.85*	.02	.09
Daily coping	.68*	.68*	−.09	−.10

Note. An asterisk indicates a statistically significant effect at $p < .05$.

actual personality change. Moreover, the fact that Forum participants were initially more internal than controls suggests that, rather than acquiring new beliefs, Forum participants may have intensified preexisting ones, to the extent that any change occurred at all.

A few other scattered differences were also revealed in the univariate analyses. Although most of these can be conceived of as consistent with Forum themes, they should be viewed in the context of the multiple comparisons attempted. In general, the data converge to present an overall picture of stability rather than of change over time and few, if any, consistent, sizable effects of Forum participation. This finding puts into question prior claims about dramatic positive or negative consequences of interventions such as the Forum.

The present research is the first LGAT outcome study to assess potential negative changes in mental health using an accepted index of clinical symptomatology, the BSI. No negative effects of Forum participation were found for any of the symptoms measured by this instrument. Other potential negative effects of participation could have been revealed by any of the variables measuring well-being, life events, or relations within the social network (e.g., reduced self-esteem, reduced satisfaction). Overall, there was no psychological evidence of appreciable negative effects.

A plausible explanation for the lack of substantial positive effects of Forum participation is that these may have been mediated by other factors (cf. Baron & Kenny, 1986). The design of this study enabled us to test two plausible mediational models. The first assessed the possible mediating role of "perceived control" on any beneficial effect of Forum participation. It assumed that the beneficial consequences of the Forum would be evidenced only for those who showed increased control as a result of participation. Because much Forum content is directed toward increasing personal responsibility and perceived control and because control has been related to well-being and psychological adjustment in the literature (Brannigan, Rosenberg, & Loprete, 1977; Kilmann, Laval, & Wanlass, 1978; Wolk & Kurtz, 1975), this model seemed reasonable.

A second plausible mediational hypothesis is that Forum participation is only an initial step in the change process. To produce beneficial effects, it must be supplemented by additional Forum activities (e.g., "graduate seminars") that, in addition to their content, enhance the possibility of forming a social network supportive of Forum values and working toward personal goals.

Tests of these hypotheses using a structural equation approach failed to support either of the mediational models. Increased perceived control in Forum participants as measured by the posttest was not related to any beneficial consequences in the follow-up. Similarly, further involvement in Forum-sponsored activities after the conclusion of the intervention, as measured by actual hours of participation, did not mediate long-term outcome.

Before we conclude, some qualifications on the overall findings of the present research should be noted. First, because only the Forum was studied, the extent to which the current results are generalizable to other interventions is unclear. Second, like many other psychological studies, this one is based on paper and pencil measurement techniques. Third, only well-developed measures were included, so certain domains in which few such measures exist (e.g., world view) may have been underrepresented. Fourth, the data are based on a sample that was reduced as a result of several potentially selective processes: Only those individuals could be included in our research who (a) were willing to participate and sign an informed consent form, (b) could be contacted by the researchers within a given time frame, (c) did not have any prior LGAT experience, and (d) filled out and returned an extensive battery of instruments. Each of these factors resulted in the loss of subjects and perhaps the introduction of selective bias. These elements are inherent in the present research and in any state-of-the-art, alternative research design because of methodological or ethical considerations. Nevertheless, analyses suggested that Forum participants who took part in this research were not significantly different from area Forum participants as a whole. This reduces the likelihood that the subjects who agreed to participate in our study are representative of only a specific subpopulation of Forum participants.

Another source of bias can occur if those who initially agree to take part in a study drop out selectively. When volunteer subjects are required to respond to questionnaires more than once

with intervening periods of time, there are commonly problems with attrition. These become more serious when there are greater intervals between the initial testing and the follow-up testing. In this study, appropriate comparisons between study participants who completed the various phases of the research and those who did not failed to reveal the introduction of any systematic bias. Thus, selective attrition is unlikely to play an important role in accounting for our findings.

Overall, we assessed the psychological effect of Forum participation on a broad array of dimensions using innovative assessment techniques and a design that allowed for a causal interpretation of results. The more rigorous analyses revealed no demonstrable long-term beneficial or harmful psychological effects of participation in the Forum on any of the dimensions measured. If such effects had occurred, we feel it is likely that they would have been evidenced in our research.

References

Andrews, F. M., & Crandall, R. (1976). The validity of measures of self-reported well-being. *Social Indicators Research, 3,* 1–19.

Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51,* 1173–1182.

Beit-Hallahmi, B. (1987). The psychotherapy subculture: Practice and ideology. *Social Science Information, 26,* 475–492.

Berger, F. M. (1977). Awareness groups and psychiatry. *Biosciences Communication, 3,* 89–98.

Brannigan, G. G., Rosenberg, L. A., & Loprete, L. J. (1977). Internal-external expectancy, maladjustment and psychotherapeutic intervention. *Journal of Personality Assessment, 41,* 71–78.

Brewer, M. (1975, August). We're gonna tear you down and put you back together. *Psychology Today,* pp. 35–40, 82, 88–89.

Campbell, D. T., & Stanley, J. C. (1966). *Experimental and quasi-experimental designs for research.* Chicago: Rand McNally.

Cialdini, R. (1984). *Influence.* Glenview, IL: Scott, Foresman.

Cinnamon, K., & Farson, D. (1979). *Cults and cons: The exploitation of the emotional growth consumer.* Chicago: Nelson-Hall.

Conway, F., & Siegelman, J. (1978). *Snapping.* Philadelphia: Lippincott.

Cook, T. D., & Campbell, D. T. (1979). *Quasi-experimentation: Design and analysis issues for field studies.* Chicago: Rand McNally.

Crowne, D. P., & Marlowe, D. (1960). A new scale of social desirability independent of psychopathology. *Journal of Consulting Psychology, 24,* 349–354.

Derogatis, L. R. (1975). *The Affects Balance Scale (ABS).* Baltimore: Clinical Psychometric Research.

Derogatis, L. R. (1977). *SCL-90 (Revised Version) manual.* Baltimore: Clinical Psychometric Research.

Derogatis, L. R., & Melisaratos, N. (1983). The Brief Symptom Inventory: An introductory report. *Psychological Medicine, 13,* 595–605.

Derogatis, L. R., & Spencer, P. (1982). *The Brief Symptom Inventory (BSI). Administration, scoring and procedures manual I.* Baltimore: Division of Medical Psychology, Johns Hopkins University School of Medicine.

Emery, S. (1977). *Actualizations: You don't have to rehearse to be yourself.* Garden City: Doubleday.

Erhard, W., & Gioscia, V. (1977). The *est* standard training. *Bioscience Communication, 3,* 104–122.

Erhard, W., & Gioscia, V. (1978). *est:* communication in context of compassion. *Current Psychiatric Therapy, 18,* 117–125.

Feningstein, A., Scheier, M. F., & Buss, A. H. (1975). Public and private self-consciousness: Assessment and theory. *Journal of Consulting and Clinical Psychology, 43,* 522–527.

Fenwick, S. (1976). *Getting it: The psychology of* est. Philadelphia: Lippincott.

Finkelstein, P., Wenegrat, B., & Yalom, I. (1982). Large group awareness training. *Annual Review of Psychology, 33,* 515–539.

Gottlieb, B. M. (Ed.). (1988). *Marshaling social support: Formats, processes and effects.* Newbury Park, CA: Sage.

Haaken, J., & Adams, R. (1983). Pathology as personal growth: A participant-observation study of Lifespring training. *Psychiatry, 46,* 270–280.

Hirsch, B. J. (1979). Psychological dimensions of social networks: A multimethod analysis. *American Journal of Community Psychology, 7,* 263–272.

Hirsch, B. J. (1980). Natural support systems and coping with major life changes. *American Journal of Community Psychology, 8,* 159–172.

House, J. S., McMichael, A. J., Wells, J. A., Kaplan, B. H., & Landerman, L. R. (1979). Occupational stress and health among factory workers. *Journal of Health and Social Behavior, 20,* 139–160.

Jöreskog, K. G., & Sörbom, D. (1986). *Analysis of linear structural relationships by maximum likelihood, instrumental variables, and least squares methods.* Mooresville, IN: Scientific Software.

Judd, C. M., & Kenny, D. A. (1981). *Estimating the effects of social interventions.* Cambridge, England: Cambridge University Press.

Kenny, D. A. (1975). A quasi-experimental approach to assessing treatment effects in the nonequivalent control group design. *Psychological Bulletin, 82,* 345–362.

Kenny, D. A. (1979). *Correlation and causality.* New York: Wiley.

Kilmann, P. R., Laval, R., & Wanlass, R. L. (1978). Locus of control and perceived adjustment to life events. *Journal of Clinical Psychology, 34,* 512–513.

Lord, F. M. (1960). Large-scale covariance analysis when the control variable is fallible. *Journal of the American Statistical Association, 55,* 307–321.

Norbeck, J. S., Lindsey, A. M., & Carrieri, V. L. (1981). The development of an instrument to measure social support. *Nursing Research, 30,* 264–269.

Norbeck, J. S., Lindsey, A. M., & Carrieri, V. L. (1983). Further development of the Norbeck Social Support Questionnaire: Normative data and validity testing. *Nursing Research, 32,* 4–9.

Reichardt, C. S. (1979). The statistical analysis of data from nonequivalent group designs. In T. D. Cook & D. T. Campbell (Eds.), *Quasi-experimentation: Design and analysis issues for field settings* (pp. 147–205). Chicago: Rand McNally.

Robinson, J. P., & Shaver, P. R. (1973). *Measures of social psychological attitudes* (Rev. ed.). Ann Arbor, MI: Institute for Social Research.

Rome, H. P. (1977). Limits of the human mind. *Psychiatric Annals, 7(11),* 11–32.

Rosenberg, M. (1965). *Society and the adolescent self-image.* Princeton, NJ: Princeton University Press.

Rotter, J. B. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs, 80* (Whole No. 609).

Sarason, I. G., Johnson, J. H., & Siegel, J. M. (1978). Assessing the impact of life changes: Development of the Life Experiences Survey. *Journal of Consulting and Clinical Psychology, 46,* 932–946.

Sharp, D.E.A. (1985). *Coping with the death of a spouse: Rumination and the use of activity among bereaved women.* Unpublished master's thesis, University of Waterloo, Ontario.

Shaw, R. (1977). Large-scale awareness training groups: Their implication for the mental health professional. *Bioscience Communication, 3,* 85–88.

Wallston, B. S., Wallston, K. A., Kaplan, G. D., & Maides, S. A. (1976). Development and validation of the Health Locus of Control (HLC) scale. *Journal of Consulting and Clinical Psychology, 44,* 580–585.

Winstow, F. (1986, March-April). Being there. *Networker,* pp. 20–29, 77–80.

Wolk, S., & Kurtz, J. (1975). Positive adjustment and involvement during aging and expectancy for internal control. *Journal of Consulting and Clinical Psychology, 43,* 173–178.

Wortman, C. B., & Silver, R. L. (1981). *SIDS Loss: Psychosocial impact and predictors of coping* (Grant No. PHS MCJ260470). Public Health Service.

Wylie, R. C. (1974). *The self concept.* Lincoln: University of Nebraska Press.

Zander, A. F. (1985). *The purposes of groups and organizations.* San Francisco: Jossey-Bass.

Zilbergeld, B. (1983). *The shrinking of America.* Boston: Little, Brown.

Received April 4, 1989
Revision received June 26, 1989
Accepted July 31, 1989 ■