American Journal of Community Psychology, Vol. 23, No. 1, 1995

A Preventive, Psychoeducational Approach to Increase Perceived Social Support

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Investigated the effects of a 13-week preventive, psychoeducational intervention program to improve perceived social support. Fifty-one, low-perceived support, community residents were randomly assigned to an intervention or wait-list control condition. Intervention subjects received training in social skills and cognitive reframing regarding the self and social relations. The intervention led to increased perceived social support from family, but not from friends. As hypothesized by social cognition models, increases in perceived support appeared to be mediated by changes in self-esteem and frequency of self-reinforcement. Further, such changes in cognition about the self were larger than the changes observed for perceived support, suggesting that it may be easier to change cognition about the self than perceptions of support.

KEY WORDS: social support; psychoeducational intervention; prevention.

Perceived social support has been defined as an individual's "cognitive appraisal of being reliably connected to others" (Barrera, 1986), and it has been well documented that low levels of perceived support are related to psychological distress and disorder (Cohen & Wills, 1985). Further, the relation between perceived support and disorder does not appear to result merely from the potential confounds of prior symptomatology or social competence (Cohen, Sherrod & Clark, 1986; Lakey, 1989; Monroe, Bromet, Connell, & Steiner, 1986; Phifer & Murrell, 1986). Thus, increasing perceived support in individuals at risk for psychological disturbance may be an important preventive strategy (Heller, Price, & Hogg, 1990). This paper

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0091-0562/94/0200-0117$07.50/0

describes a controlled trial of a psychoeducational, group, preventive intervention designed to increase perceived social support.

In designing interventions to increase perceived support, there are a number of important conceptual issues to consider. From our point of view, it is important to consider how and to what extent perceived support is rooted in the social environment and how it has its effects on mental health. A careful consideration of these issues is important, because the theoretical models of perceived support that scholars adopt have a strong impact on the strategies and tactics of social support interventions.

From the beginning of research in this area, perceived support has been viewed as directly reflecting the actual supportive behaviors provided by one's social network (*enacted support*; e.g., advice or reassurance) (Cutrona & Russell, 1990; B. R. Sarason, Sarason, & Pierce, 1990; Thoits, 1986). These models propose that perceived support is related to symptoms because when individuals are provided with supportive behaviors, they cope with stressful events more effectively and thus are less likely to experience psychological distress (i.e., buffering effects, Cohen & Wills, 1985). This model has guided virtually all social support interventions to date and the strategies generated from this model typically provide participants with additional support through trained volunteers, staff, or support groups (Lakey & Lutz, in press).

However there are important empirical problems with the traditional view of social support. Although the model hypothesizes that the actual behaviors of others drive social support effects, perceived and enacted support do not appear to be highly related. Studies in which subjects self-report both perceived and enacted support frequently show correlations of about $r = .30$, with many approaching zero (Barrera, 1986; Dunkel-Schetter & Bennett, 1990). Although correlations of this magnitude are not trivial in psychological research, they are too small to support the hypothesis that perceived support is rooted primarily in enacted support (Meehl, 1978). Furthermore, these relations are difficult to interpret because other research has found that high perceived support persons have better memory for support-relevant behaviors (Lakey & Cassady, 1990; Lakey, Moineau, & Drew, 1992). Thus, the weak relation in self-report studies may reflect differences in support-related memory rather than differences in enacted support.

Behavioral observation studies also have found limited evidence for a strong relation between enacted and perceived support. These studies observe participants and their confidants in laboratory supportive interactions and extensively code the enacted support provided by companions. However, most of these investigations have found no differences between the enacted support provided by confidants of high and low perceived sup-

port individuals (Belcher & Costello, 1991; Heller & Lakey, 1985; Lakey & Heller, 1988). The absence of a relation between perceived and enacted support in Lakey and Heller (1988) is particularly noteworthy because they found that a behavioral measure of enacted support predicted participants' subsequent social problem-solving performance. Thus, although they observed the hypothesized relation between behavioral measures of enacted support and subsequent coping, this process was unrelated to perceived support. Similarly, Cutrona, Suhr, and MacFarlane (1990) observed a supportive interaction between strangers in a laboratory setting. Participants' ratings of the supportiveness of their interaction partners were unrelated to their partner's actual behavior. In contrast to these studies, Gurung, Sarason, and Sarason (1994) reported correlations in the $r = .30$ range between the supportive behaviors provided by friends and participants' ratings of the supportiveness of that specific relationship. Thus, stronger relations between measures of perceived and enacted support might be obtained if researchers used relationship-specific measures. Nonetheless, as a whole, these behavioral observation studies converge with the self-report studies in suggesting a less than strong relation between perceived and enacted support.

A third approach has been to examine the correspondence between respondents' and significant others' reports of the perceived supportiveness of either their own relationship (Abbey, Andrews, & Halman, 1995; Vinokur, Schul, & Caplan, 1987), other relationships of the respondents' (Cutrona, 1988), or a shared social environment (Reppetti, 1987). In each of these studies, there were significant relations between respondents' and others' reports of respondents' perceived support. However, as in the self-report literature, the effect sizes were not large, accounting for between 10 and 20% of the variance. Although these studies provide evidence that perceived support is rooted in the social environment in some way, they do not necessarily show that perceived support is rooted in enacted support per se. Because these are correlational designs, the obtained agreement can be driven by a wide range of factors. For example, Lakey, Ross, Butler, and Bentley (1994) found that an important determinant of supportiveness judgments was the perceived similarity of the target. Thus, agreement between persons about the supportiveness of their relationship may be driven by more global factors, rather than the provision of enacted support.

Although many social support researchers view the relatively weak relation between enacted and perceived support with dismay, these findings are not surprising given the results of basic research on person memory and judgment. It is well established that judgments of an individual's personal characteristics are largely unrelated to the memory of his or her actions (Hastie & Park, 1986; Srull & Wyer, 1989). There are several theo-

retical models to explain this, but most assume that persons have a strong tendency to think of others in trait terms, and such judgments are relatively spontaneous and automatic (Hastie & Park, 1986; Srull & Wyer, 1989; Wyer & Carlston, 1994). When asked to judge a target's personal characteristics, people rely on memories of their prior judgments, rather than reviewing all instances of behavior in memory (Hastie & Park, 1986; Srull & Wyer, 1989; Wyer & Carlston, 1994). Applied to social support, this research suggests that when people make judgments about the supportiveness of their social networks, they base them on prior judgments and do not review specific supportive behaviors.

Beyond the relatively weak link between perceived and enacted support, there are other empirical problems with models that hypothesize that enacted support is the mechanism for perceived support effects. Unlike low perceived support, low enacted support is not consistently related to psychological disorder (Barrera, 1986; Dunkel-Shetter & Bennett, 1990; Wethington & Kessler, 1986).

Traditional models of social support have had the dominant impact in social support interventions. Although several authors have acknowledged that perceived support could be heavily cognitive in nature (Cohen & Wills, 1985; Heller, Swindle, & Dusenbury, 1986), and some have suggested the value of directly modifying social support appraisals (Vaux, 1988), virtually all interventions have been based on enacted support models. However, despite the implementation of several such interventions, there is limited evidence for their efficacy (Lakey & Lutz, in press). Much of the research is hampered by methodological flaws, including nonrandom assignment to groups, inappropriate statistical analyses, and the use of nonstandardized instruments for measurement. Some well-conducted studies have provided extensive enacted support from paraprofessionals and have produced significantly greater improvements in symptoms compared to no-treatment controls (e.g., Bloom, Hodges, & Caldwell, 1982; Vachon, Lyall, Roger, Freedman-Letofsky, & Freeman 1980). However, other equally well-conducted studies have had no impact on symptoms (Baumgarten, Thomas, Poulin de Courval, & Infante-Rivard, 1988; Dadds & McHugh, 1992; Heller, Thompson, Trueba, Hogg, & Vlachos-Weber, 1991). Moreover, none of these studies demonstrated changes in perceived social support as a result of the intervention.

Social Cognition Perspectives of Perceived Social Support

In contrast to the enacted support model, social cognition approaches (Lakey & Cassady, 1990; B. R. Sarason, Pierce, & Sarason, 1990) hypothe-

size that perceived support primarily is a cognitive phenomenon that represents a highly abstracted and impressionistic view of the social world. However, it is important to emphasize that social cognition approaches do not hypothesize that perceived support is completely divorced from the social environment. Although rooted in the social environment in important yet largely undiscovered ways, it is not primarily a reflection of enacted support or even of any particular relationship. Rather, judgments of the supportiveness of others operate according to the same processes as other types of judgments about people (e.g., personality inferences). These are made relatively quickly, easily, and in many cases, on the basis of limited information (Lakey et al., 1994). According to these models, the development of perceived support is strongly influenced by individual difference variables (Lakey, 1989; Lakey & Dickinson, 1994), and the quality of early relationships, particularly the quality of attachment with parental figures (B. R. Sarason, Pierce, & Sarason, 1990). Once formed, these global conceptions of the world as supportive remain relatively stable (I. G. Sarason, Sarason, & Shearin, 1986; Vitaliano, Russo, Young, Teri, & Maiuro, 1991) and exert an ongoing influence on social information processing (Lakey & Cassady, 1990). Thus, according to schematic processes, people who view the world as supportive tend to interpret situations in a manner consistent with their prior beliefs (Lakey & Cassady, 1990).

Social cognition approaches and the research generated by it, make a number of new predictions about how to influence perceived social support that differ from more traditional models (Lakey & Lutz, in press). The development of the intervention described here was guided by four characteristics of perceived social support emphasized by social cognition models. Three of these involved cognitive processes in social support, whereas the fourth focused on changing participants' actual social behavior. The four were (a) the close link between perceived support and cognition about the self, (b) the role of the family of origin in the development of perceived support, (c) the tendency of low versus high perceived support persons to interpret ambiguous supportive behaviors more negatively, and (d) the role of social competence in promoting the development of perceived support.

The close link between self-referent cognition and perceived support suggests that improving self-referent cognition may improve support perceptions. Thus, one aspect of the intervention involved recognizing positive qualities in oneself, and in correcting cognitive distortions regarding the self. These interventions were drawn from cognitive therapies of emotional disorders (e.g., Beck, Rush, Shaw, & Emery, 1979). This tactic was suggested by research showing that perceived support was closely related to cognition about the self (e.g., self-esteem and dysfunctional attitudes), and

that most of the relation between perceived support and distress overlapped with the relation between self-referent cognition and distress (Lakey & Cassady, 1990). Further, the importance of the role of self-referent cognition in perceived support is suggested by a range of research literature. For example, basic research in social cognition indicates that the same concepts used in construing the self tend to be used in person perception as well (Higgins, King, & Mavin, 1982; Lewicki, 1983). Object relations theory also hypothesizes that concepts of self and others are intimately linked and that an important route for changing conceptions of others is to examine perceptions of self (Westen, 1991).

Another important component of our social support intervention is helping clients reconceptualize relationships with their family of origin. We emphasized the family of origin because family members constitute very important relationships with most persons, and because of theory and evidence suggesting that the sense of social support from one's family may be generalized to other relationships. For example, B. R. Sarason, Pierce, and Sarason (1990) hypothesized that the quality of familial relationships have an important role in the development of perceived support as an adult. Several studies have demonstrated relationships between recollections of parental care and adult levels of perceived support (B. R. Sarason et al., 1991) and the quality of patients' working alliance with therapists (Mallinckrodt, 1991). In addition, current perceived support from family has been found to generalize to new social relations, beyond the effects of a variety of person variables (Lakey & Dickinson, 1994). Thus, a major focus of our intervention was to help clients reconceptualize their relationships with family members. The family members of most of our participants had behaved in genuinely unsupportive ways in the past. Unfortunately, many participants had attributed these to their own lack of worth or to a family member's deliberate attempt to hurt. We helped them develop more complex attributions for these unsupportive behaviors. Participants were helped to develop more elaborate theories about how various factors and limitations conspired to lead to these behaviors (e.g., their parents' own abuse as children, a lack of skill in expressing emotions, high levels of stress, an emotional disorder).

A third major focus of the intervention was to help clients modify negative biases in interpreting supportive behaviors. This focus was inspired by research showing that compared to high perceived support individuals, low perceived support persons interpreted the same supportive behaviors more negatively (Lakey & Cassady, 1990; Lakey et al., 1992; Pierce, Sarason, & Sarason, 1992). The intervention adapted cognitive therapy techniques (Beck et al., 1979) to address social support (described in Lakey & Lutz, in press).

Finally, the intervention attempted to improve participants' social competence. This approach was based on research showing that high social competence individuals develop higher levels of perceived support in new social situations (Lakey, 1989; Lakey & Dickinson, 1994). Our conceptualization of social competence was broad and included positive expressions to others, conflict resolution, active listening, making and refusing requests, expressing negative affect appropriately, and responding to criticism. The goal was specifically not to help persons learn to ask for more enacted support but to develop more positive relationships generally. This component of the intervention is not uniquely derived from social cognition approaches. It was included on the strength of research suggesting its importance in support development.

We describe a controlled evaluation of an intervention designed to increase perceived support by modifying participants' cognition about social support and the self and by improving social competence. Single, divorced, and widowed persons were studied because persons without a marital partner may be at greater risk for low perceived support (Brown & Harris, 1978). Participants were assigned randomly to interpersonal skills training or to a waiting-list control group. Pre- and posttests were compared using standard measures of perceived social support, self-esteem, mood, assertiveness, frequency of self-reinforcement, and perception of family of origin. The study's primary predictions were (a) participants receiving the intervention would improve significantly more than controls on measures of perceived social support, and (b) changes in perceived support could be explained by changes in assertiveness, perception of the family of origin, and cognition about the self (self-esteem and frequency of self-reinforcement).

METHOD

Participants

Participants were recruited from speaking engagements at an organization for divorced and widowed people, a Jewish singles organization, and through public service, radio and newspaper announcements in the metropolitan Detroit area. The criteria for participation in the study included falling below the adult mean on a brief self-report measure of perceived support (I. G. Sarason, Sarason, Shearin, & Pierce, 1987)[3] and the absence

[3]We are grateful to Barbara R. Sarason for providing means for community-residing adults for the short form of the Social Support Questionnaire.

Table I. Participant Characteristics

Characteristic	*n*	Characteristic	*n*
Gender		Total Household income	
Female	35	0–$5000	1
Male	16	$5,000–$10,000	4
		$10,000–$15,000	3
Age		$15,00–$20,000	10
M	39.5	$20,000–$25,000	8
SD	11.3	$25,000–$30,000	7
Range	19–69	$30,000–$35,000	6
No. of children		>$35,000	11
M	0.9	Missing	1
SD	1.2		
		Years of education	
Religious affiliation		High School graduate	7
Jewish	31	Some college	12
Catholic	6	College graduate	15
Protestant	4	Grad/Professional school	17
Other	3		
None	3	Years divorced, separated, or widowed	
		<6 months	4
Ethnicity		6 months–1 year	3
Caucacian	42	1-2 years	6
African American	6	3-5 years	3
Other	3	>5 years	14

of significant psychopathology. Persons with significant psychopathology were excluded because we conceptualized this as a preventive intervention for persons who were at risk for but not currently experiencing psychological disorder. This decision was based on unstructured clinical interviews, and referrals for treatment were made for persons with clinically significant problems.

Fifty-one single adults (divorced, widowed, separated, never married) met criteria and participated in this research. Random assignment to conditions yielded no significant differences between groups on demographic variables as measured by chi-square and *t*-test analyses. See Table I for more detailed information regarding demographics.

Procedure

Participants completed measures at pre- and postintervention. Pretesting was completed as part of an initial interview conducted prior to random assignment. Posttest measurement was completed 1–3 weeks after the final session. Participants in the intervention condition received postmeasures at the last session, with instructions to complete them at home and return them through the mail. Telephone contact was made with participants as needed to remind them to complete the measures. Controls followed the same procedures except that the posttest measures were mailed to them.

Measures

Perceived Social Support from Family and Friends. The primary dependent variables in this study were measures of perceived social support. Participants completed the 40-item perceived support scale developed by Procidano and Heller (1983). The inventory is composed of two 20-item scales assessing perceived support from friends and from family. Consistent with our prior social support research, items were rated on a 5-point Likert scale ranging from *always* to *never* to increase the variability in scores. High scores indicate greater degree of perceived support. These scales have been widely used in studies of social support and have substantial evidence for their validity. In the present sample, internal consistencies were alpha = .92 for family and alpha = .93 for friends at both Time 1 and Time 2.

Mediating Variables

Because we hypothesized that three types of constructs might act as mediators for any changes in perceived support, we included measures of self-referent cognition, social competence, and perceived family of origin. This enabled mediational analyses to be conducted as outlined by Baron and Kenny (1986).

Frequency of Self-Reinforcement Questionnaire. The 30-item FSRQ was designed to measure the degree to which individuals administer self-reinforcement (Heiby, 1983). Items are rated on a 4-point scale ranging from 0 (*never descriptive of me*) to 4 (*most of the time descriptive of me*). Example items include: "When I do something right I take time to enjoy the feeling" and "When I make mistakes, I take time to criticize myself" (reverse scored). High scores indicate greater degree of self-reinforcement. Internal consistency of this sample was .85 at Time 1, and .88 at Time 2. This scale

was included to test the hypothesis that changes in self-referent cognition could account for changes in perceived support.

Assertion Inventory. The 40-item AI assesses 8 categories of assertiveness ranging from expressing positive feelings to dealing with criticism. Participants rate items on the likelihood of performing the specific behavior (e.g., "ask a favor of someone") on a scale ranging from 1 (*always do it*) to 5 (*never do it*). Participants also rate the amount of anxiety or distress aroused in the situation on a scale from 1 to 5. Lower scores indicate greater degree of assertive behavior and lower level of discomfort when behaving assertively. Internal consistencies in the present sample were alphas = .93 (Time 1) and .95 (Time 2) for the discomfort scale and alphas = .89 (Time 1) and .90 (Time 2) for the likelihood scale. This scale was included to test the hypothesis that changes in social competence could account for any changes in perceived support.

Family of Origin Scale. For use in this study, participants completed the 10 items of the FOS that make up Factor 1 of the 40-item scale (Hovestadt, Anderson, Piercy, Cochran, & Fine, 1988). Factor 1 items account for 41% of the variance in the measure and primarily involve the individual's perception that family members encouraged the expression of thoughts and feelings (e.g., "I found it easy in my family to express what I thought and how I felt"). Items are rated on a 5-point scale from *strongly agree* to *strongly disagree.* Internal consistencies for the 10-item scale were alpha = .91 at both Time 1 and Time 2. This scale was included to test the hypothesis that changes in perceptions of family of origin could explain any changes in perceived social support.

Rosenberg Self-Esteem Scale. This frequently used 10-item self-report scale was designed to assess self-esteem (Rosenberg, 1979). Individuals respond *strongly agree, agree, disagree,* or *strongly disagree* to statements about the self (e.g., "I feel that I have a number of good qualities"). Higher scores indicate greater degree of self-esteem. The current study yielded an internal consistency of alpha = .92 at both pre- and posttest. This scale was included to test hypotheses that changes in self-referent cognition could explain any changes in perceived support.

Measures of Psychological Distress

One goal of social support interventions is to influence psychological symptomatology. Thus we included measures of both trait anxiety and depression.

State-Trait Anxiety Inventory–Trait form. This 20-item scale assesses trait anxiety and has substantial evidence for its reliability and validity

(Spielberger, Gorsuch, & Lushene, 1984). Individuals rate items on a 4-point scale ranging from *almost always* to *almost never.* For the current sample, internal consistency was alpha = .94 at both pre- and posttest.

Beck Depression Inventory. The BDI is a 21-item self-report measure frequently used in measuring variations in subclinically depressed mood. The BDI has been shown to have good reliability and construct validity (Beck, Steer, & Garbin, 1988). Internal consistency in the present sample was alpha = .89 at preintervention and .88 at postintervention.

Group Leaders

Group leaders were six upper-level graduate students in the Wayne State University PhD program in Clinical Psychology and two university-affiliated MSWs. There were two leader/therapists per group. Weekly supervision sessions for all leaders were conducted by the third author and leaders were instructed based on the manual she authored. Each session was outlined clearly in written handouts which were reviewed and role-played in supervision. Analyses indicated no effects for group leaders on any of the dependent variables.

The Intervention

The intervention consisted of 13 weekly sessions lasting 3 hours each. Sessions were held at a local Jewish Community Center, a group leader's home,[4] or at the Wayne State University Psychology Clinic. There were 4 intervention groups, consisting of 4 to 10 members per group. There were no effects for intervention site.

The initial six sessions focused on social skills training, including positive assertions to self and others, conflict resolution strategies, active listening, making and refusing requests, expressing negative affect appropriately, and responding to criticism. The remaining sessions focused on cognitive restructuring including identifying and correcting dysfunctional attitudes that can occur in relationships, positive self-statements, self-acceptance, and reconceptualizing negative thoughts and feelings associated with important relationships in the participants' lives. The bulk of each session was devoted to modeling, coaching, and rehearsal. Reading and homework assignments were utilized throughout the intervention.

[4]Some sessions were held at a group leader's home because her disability made it difficult for her to travel.

Table II. Pre- and Posttest Means for Treatment and Control Groups

		Pretest		Posttest	
	n	*M*	*SD*	*M*	*SD*
Perceived family support					
Treatment	25	57.8	13.7	62.6	13.6
Control	26	55.2	13.6	55.1	11.3
Perceived friend support					
Treatment	23	65.2	13.7	70.2	12.2
Control	26	66.5	13.8	69.2	11.9
Frequency of self-reinforcement					
Treatment	25	50.0	11.9	58.8	12.3
Control	26	45.3	13.2	47.5	13.0
Self-esteem					
Treatment	25	28.2	6.2	31.8	5.8
Control	26	26.9	7.6	27.4	6.4
Perceived family of origin					
Treatment	25	25.0	9.9	28.5	8.6
Control	26	25.0	9.0	25.5	8.2
Assertiveness-discomfort					
Treatment	24	100.7	25.5	93.3	28.5
Control	26	98.2	22.7	97.5	22.7
Assertiveness-probability					
Treatment	24	106.2	18.6	97.5	20.6
Control	25	103.4	18.0	100.3	17.2
Depression					
Treatment	25	12.3	8.2	7.7	7.5
Control	26	15.7	9.6	12.1	8.4
Anxiety					
Treatment	24	44.3	10.0	40.5	12.5
Control	26	51.9	11.0	49.7	11.5

Whenever possible, specific change attempts were directed toward participant's family of origin, current family, or exspouse.

RESULTS

Of the original 65 individuals completing Time 1 measurement, 14 dropped out of the study: 7 had been assigned to the intervention and 7

to the control condition. This reflected a 22% dropout rate per condition, which is comparable to other prevention programs with substantial time commitments (Sandler et al., 1992). *T*-test and chi-square statistics comparing dropouts and completers indicated those who dropped out were less likely to be divorced, $\chi^2(4, N = 65) = 14.01, p < .01$, and had more favorable perceptions of their family of origin, $t(64) = -3.18, p < .01$.

To determine the initial equivalence of the intervention and control groups, *t* tests were computed comparing groups on all pretest dependent measures. The groups differed only on trait anxiety such that wait-list participants reported higher levels than did intervention participants at pretest, $t(48) = -2.55, p < .05$. Means and standard deviations of the dependent measures for both intervention and control groups are provided in Table II.

ANCOVAs were used to test the major hypotheses because we specifically predicted that the two groups would display differential change over time. Posttest scores were the dependent variables with pretest scores as covariates with one between-participants factor (intervention vs. control). Because our primary hypothesis was that the intervention would influence perceived support scores, we used one-tailed tests for these comparisons only. Results indicated that participants receiving the intervention demonstrated significantly greater change than controls for perceived family support, $F(1, 48) = 5.78, p = .01$, but not for perceived friend support, $F(1, 46) = 0.46, p = .25$.

Mediational Analyses

Mediational analyses were conducted following the strategy outlined by Baron and Kenny (1986). Evidence that the hypothesized mediators (e.g., self-esteem) drove the change in perceived support from family would be provided by (a) significant intervention effects for the hypothesized mediators, (b) significant correlations between change in the mediators and change in perceived support from family, and (c) a significant reduction in the intervention effect on perceived support from family when change in the mediators is controlled statistically.

To determine if the intervention produced change in the hypothesized mediating variables, a MANOVA was performed on the five potential mediators. MANOVA was utilized to limit experiment-wise error. Because we hypothesized differential change over time as a function of group membership, the dependent variables were the standardized, residualized change scores for self-esteem, frequency of self-reinforcement, family of origin, assertiveness-probability, and assertiveness-discomfort. Results indicated that

persons receiving the intervention achieved larger improvements in the hypothesized mediating variables than did controls, Wilks's lambda procedure, approximate $F(5, 41) = 3.16, p = .017$.

Analyses of each hypothesized mediating variable were performed using ANCOVAs in the same manner as in the analyses for perceived support. Demographic variables were included as covariates when they were found to be predictors of change for a given variable. Of the hypothesized mediating variables, self-esteem and frequency of self-reinforcement significantly increased as a function of the intervention, $F(1, 47) = 12.99$, $p < .001$, and $F(1, 46) = 7.61, p = .01$.[5] The intervention produced a marginally significant change in perceptions of family of origin, $F(1, 48) = 3.48$, $p = .07$, and nonsignificant trends for the two assertion measures, $F(1, 46) = 2.19, p = .15$ for discomfort, and $F(1, 44) = 1.89, p = .17$ for probability.[6]

To test the hypothesis that change in self-esteem and frequency of self-reinforcement predicted change in perceived support from family, correlations among the residualized change scores for these variables were calculated for the entire sample. Change in self-esteem and frequency of self-reinforcement was associated significantly with change in perceived support from family ($r = .44, p < .01$; and $r = .37, p < .01$).

To test the hypothesis that change in self-esteem and self-reinforcement could account for the intervention effect on perceived support from family, an ANCOVA on posttest perceived support from family scores was computed controlling for pretest measures of family support, change in self-esteem and change in self-reinforcement. Consistent with the mediational hypothesis, when changes in self-esteem and self-reinforcement were controlled, the intervention effect for perceived family support was eliminated, $F(1, 45) = 0.92, p = .34$.

To determine whether the intervention had an impact on psychological symptoms, a MANOVA was conducted on residualized depression and anxiety scores. The intervention did not significantly influence symptom levels, Wilks's lambda procedure, approximate $F(2, 47) = 0.93$, ns.

Finally, because this was a group intervention, there is the potential that the independence of observations assumption of parametric statistics was violated. To address this, secondary analyses were conducted using average scores as the unit of analysis for each of the four groups in the intervention condition and the four groups in the control condition. Thus

[5]Because involvement in concurrent psychological therapy predicted increases in frequency of self-reinforcement, this variable was included as a covariate in analyses focusing on self-reinforcement.

[6]Because involvement in concurrent psychological therapy was a marginal predictor ($p = .06$) of change in assertion-probability, it was included as a covariate in analyses focusing on the latter variable.

group means were used as data points rather than individual scores. Waiting-list control data were combined according to the particular groups to which participants were assigned when they ultimately received the intervention. Despite considerable loss of degrees of freedom, the results were essentially identical to the more conventional analyses.

DISCUSSION

The present study found that the intervention increased perceived social support from family, self-esteem, and frequency of self-reinforcement. Moreover, changes in self-esteem and self-reinforcement could account for changes in perceived support from family. These results are important because they (a) represent a rare demonstration that perceived support can be modified, (b) provide information about the mechanisms involved in changing support perception, and (c) inform theory about how perceived support operates.

An emerging theoretical debate in the social support literature involves the extent to which perceived support effects are driven by the actual supportive behaviors of others or whether it operates more similarly to cognition about the self (Lakey & Cassady, 1990; B. R. Sarason, Pierce, & Sarason, 1990; B. R. Sarason, Sarason, & Pierce, 1990). The traditional model of perceived support has generated interventions that focus on providing low perceived support persons with higher levels of enacted support (e.g., Baumgarten et al., 1988; Heller et al., 1991). Although well conceived and executed, these interventions have not yet been successful in improving perceived support. Social cognition models provide new intervention strategies based on the notion that support perceptions can be improved by teaching low-perceived support persons the social and cognitive skills necessary to create or enhance their own naturally occurring intimate relationships. The current study provides preliminary evidence that such an approach may be a promising prevention strategy. Although other research has suggested that skills training may boost perceived support (e.g., Barthe & Schinke, 1984; Schinke, Schilling, Barth, Gilchrist, & Maxwell, 1986), the current study corrects many of the methodological difficulties occurring in this research by using random assignment to groups, an adequate sample size, and reliable and valid measures.

The current research provides insights on how to modify perceived support. Changes in the perception of family support could be accounted for by changes in self-esteem and self-reinforcement, suggesting that positive cognition about the self can drive increases in perceived support. These findings have both theoretical and applied implications. From an applied

perspective, these findings raise the question of whether perceived support might be more directly influenced by targeting such constructs as self-esteem and self-reinforcement. Although we placed special emphasis on social skills and perceptions of one's family of origin, there was little evidence that the more interpersonal aspects of our intervention accounted for the intervention effect. We wonder whether interventions would be even more effective if they placed exclusive emphasis on the apparent active ingredients (self-esteem and self-reinforcement) and did not specifically address social relations. If focusing on self-esteem alone is an effective perceived support intervention, would adding a training component specifically targeting perceived support add to its effectiveness?

Theoretically, the findings are consistent with research indicating that perceived support is linked closely to cognition about the self (Lakey & Cassady, 1990) and more general research indicating that the same constructs used in self-perception are used in person perception (Higgins et al., 1982; Lewicki, 1983). This study adds to our knowledge by providing an experimental demonstration that procedures that influence self-conceptions also influence support perceptions. Additionally, some scholars have raised the question of whether perceived support levels are actually driven by psychological symptoms (Monroe & Steiner, 1986). As applied to the current research, this alternative hypothesis predicts that changes in symptoms drive both changes in cognition about the self and perceived support. However, because the intervention did not influence symptoms in the current study, this alternative hypothesis can be ruled out.

Several limitations of the current research should be noted. First, the absence of follow-up data makes it impossible to know whether the intervention effects for perceived support weaken or strengthen over time. Second, perceived support from friends did not change significantly with skill training. Although the content of the training emphasized family relations, our model suggests that changes in self-concept should have resulted in changes in perceived support from friends as well. It is possible that self-esteem is more closely linked to family relations than to perceived support from friends, but this hypothesis is speculative and needs further investigation. Third, while perceived support from family did change significantly, the effect size was relatively small, and did not generate improvements in depression or anxiety. From a practical standpoint, the results of this study, other interventions (e.g., Heller et al., 1991), and basic research (I. G. Sarason et al., 1986) suggest that perceived social support is a fairly stable construct that is not easily enhanced. Given that the current research produced larger changes in self-esteem and self-reinforcement than in perceived support, it may be that support perceptions are even more stable and less subject to change than other psychosocial variables.

On the other hand, larger changes may have occurred in self-referent cognition, because such emphasis was placed on this in the intervention. Given the strong relationship between mental health and perceived social support, the hope has been that enhancing perceived support could provide an important preventive strategy. However, given the results of the current study, and other social support interventions (Lakey & Lutz, in press), it may be easier to change other health-related constructs.

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