Peer Support Telephone Dyads for Elderly Women: Was This the Wrong Intervention?[1]

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Tested a preventive intervention in which peer telephone dyads were developed for low-income, community-living, elderly women with low perceived social support. After an initial assessment, respondents were randomly assigned to either an assessment-only control or received 10 weeks of friendly staff telephone contact. After a second assessment, participants receiving the staff contact were randomly assigned to continue that contact or were paired in dyads to continue phone contact with one another. Dependent variables were measures of perceived social support, morale, depression, and loneliness. All groups, particularly the staff contact group, showed some improvement in mental health scores over time, but there were no significant differences between intervention groups, or between intervention and assessment-only control groups. The results suggest that participation in the study and in personal assessment interviews at home were probably morale enhancing, and that additional telephone contact did not significantly add to that effect. Evidence also indicates that, in this sample, low perceived family support was significantly related to poor mental

health, so it is possible that a program designed to increase friend support may have been the wrong intervention.

There are numerous studies in the epidemiological literature indicating that individuals with social support experience higher levels of psychological well-being than those with weak ties. This result has been found across the age range (Kaplan, Roberts, Camacho, & Coyne, 1987; Seeman, Kaplan, Knudsen, Cohen, & Guralnik, 1987) and for indices of both physical and mental health (Berkman & Syme, 1979; Gottlieb, 1987; House, Robbins, & Metzner, 1982; Kessler & McLeod, 1985; Wethington & Kessler, 1986). However, the *intervention* literature is much less clear as to whether support interventions are capable of increasing the sense of well-being among those with initial low levels of support (Gottlieb, 1988).

In the present study, peer support telephone dyads were established in groups of low-income elderly women who reported low initial levels of friend support or high loneliness. Neither peer telephone dyads or telephone contacts with staff members improved the morale or sense of well-being of participating women, compared with a randomized control group of elderly women who were assessed every 3 months but who received no further contact. This paper describes the intervention and its results and addressess possible reasons for its failure. Although one can never draw firm conclusions concerning the reasons for null results, the literature on the effectiveness of support interventions is so equivocal that more thought needs to be given to the factors responsible for *both* intervention success and failure. That is the spirit in which this report is presented.

There is reason to spotlight the elderly in studies of social support. This group is not only the fastest growing segment of our population, but potentially also the most vulnerable to problems associated with role loss and loss of attachments (Lowenthal & Robinson, 1976; Rosow, 1973, 1985). Although some have argued that isolation has functional value for the elderly and is a result of voluntary disengagement (Cumming & Henry, 1961), the increasingly more common belief is that role loss is involuntary and can result in loss of social identity eventually leading to pathology (Scheidt, 1982).

One can speculate that the isolation of the elderly may be endemic to technological societies in which career advancement depends upon the generation of new knowledge rather than the accumulation of wisdom. Furthermore, when the mobility of citizens encourages the dispersion of kin, the elderly are cut off from a useful social role, as the bearers of traditional knowledge concerning family relations and child care. This is not to imply that the majority of elderly are cut off from family contact (Shanas, 1979), because technology also can provide tools (e.g., telephones, airplanes) to

bridge geographic isolation (Wellman, 1979). Still, there is cause for concern because recent evidence indicates that isolation and role loss are factors in the increased risk for morbidity and ultimate mortality among the elderly. Studying an elderly population, Blazer (1982) found that decreased social interaction, impaired roles and attachments, and low perceived support were significant predictors of early mortality among the aged; the mortality rate among those with low perceived support was 3½ times higher at a 30-month follow-up than for those with moderate to high perceived support.

The exact mechanisms by which social support produces health benefits are still unknown. One possibility is that support may buffer social stressors, producing an attenuated effect upon the individual. Thus, having someone to talk to about a worry or concern may reduce its emotional intensity. Another possibility is that supportive others may increase the likelihood that health-enhancing behavior will occur. For example, companions may encourage visits to physicians when symptoms are reported, or may increase the likelihood that proper diet is maintained. Furthermore, since social support is often a reciprocal process, the benefits of support may accrue from being a support provider as well as a support receiver. Finally, social ties also may be a crucial ingredient in well-being, simply because of the increased activity that social interaction induces. For example, group participation and physical activity have been found to be major predictors of successful aging (Palmore, 1979).

The reciprocal nature of social support needs special emphasis. Indigenous support involves reciprocal interactions in which participants both give and receive support. Yet, in the social support literature the focus of attention is almost exclusively on receiving support (Rook & Dooley, 1985). The assumption is that loss of support leads to increased risk because the individual no longer is the recipient of caring or affirmation from others. Equally plausible is that being a support provider is psychologically enhancing, and that the loss of close relationships means no longer being able to care for others. The point is that if social support is a reciprocal process, providing support may be as important as receiving it, and this aspect of supportive relationships should receive greater attention.

The emphasis in this project was on indigenous social support, that is, behaviors that the elderly can provide for one another with a minimum of professional intervention. Over the years, there has been a general recognition that psychological help has become overprofessionalized, with a concomitant neglect of the useful social roles that friends and family play in the lives of most people. An early recognition of the value of indigenous support was provided by Gurin, Veroff, and Feld (1960) in their national survey which found that most people do not turn to mental health workers in times of personal distress. A second reason to focus on indigenous sup-

port, particularly among the elderly, is to counter the problem of role loss so eloquently described by Rosow (1967). Rosow argued that there is no effective substitute for roles that are lost "except an equally significant status which is as highly valued and rewarded" (p. 317). Thus, it is important to emphasize personal responsibility and initiative and to minimize an overreliance on professional help in programs for the elderly. Finally, we were sensitive to the problem of potential negative aftereffects of research which can occur after projects are terminated. Schulz and Hanusa (1978) followed up an earlier study by Schulz (1976) in which elderly residents of a nursing home were visited by undergraduate companions. The follow-up revealed that the positive effects of the intervention dissipated over time. Residents who initially could predict and control the frequency and duration of the visit were now worse off than those who were not visited. Thus, the problem we faced was to design an intervention that did not establish artificial relationships that could not be sustained in the research participants' natural environment. We believed that indigenous networks of peer dyads would meet these requirements.

There are reports in the literature of projects that employed older citizens as voluntary helpers, senior companions, or peer counselors (Becker & Zarit, 1978; Blonsky, 1973; Priddy & Knisely, 1982; Ruffini & Todd, 1979). However, most support intervention studies reporting positive effects are either uncontrolled demonstration projects with very few attempts to systematically assess effects on the volunteer helpers or the recipients of their services, or use participants who are preselected in some way. Volunteers, such as those who participate in senior center activities, are likely to be healthier and more motivated, and of higher economic and educational level. Thus it is not surprising that Fogelman, Roberts, and Dunbar (1983) found that a senior volunteer companion program had a greater impact on the volunteer companions than on their more functionally impaired clients. Intervention programs with support components that utilize control groups produce more equivocal results both for the elderly (Andersson, 1985; Baumgarten, Thomas, Poulin de Courval, & Infante-Rivard, 1988; Bogat & Jason, 1983; Reich & Zautra, 1989) and for other special population groups (Cohen et al., 1988; Hinrichsen, Revenson, & Shinn, 1985; also see review by Gottlieb, 1988).

The goals of the current project were to determine whether indigenous peer telephone dyads could be established among low-income elderly women and whether such supportive contacts were effective in maintaining and enhancing health, activity, and morale. Respondents first participated in friendly telephone contacts with staff members who then introduced participants to randomly assigned partners. Telephone contacts were chosen over in-person contacts for several reasons. Many elderly do not have the

mobility or transportation resources to sustain in-person visits. Telephones are generally available to most individuals and they can be accessed in all weather conditions. Telephone contacts also allow an easier modulation of depth of involvement. Individuals who might prefer less personal involvement than their dyad partner should be more comfortable with telephone contacts. In-person visits among dyad partners were not discouraged, but they were not chosen as the basis of this intervention in order not to exclude elderly who had neither the physical or social resources to sustain personal visitation.

METHOD

Participants

Respondents were solicited for an intervention study whose goal was to establish telephone friendship dyads among low-support, community-living, elderly women. Initial case-finding telephone contacts were made with a random sample of residences in low-income housing tracts in three Indiana communities varying in urbanicity. The initial phone contact was to determine the presence of a woman living alone, or with one other person in the household, willing to receive a letter describing the study. Letters were sent to 1,314 women. Of these, 685 refused participation and 607 completed an in-home screening interview. Respondents were required to pass a brief mental status exam (Kahn, Goldfarb, Pollack, & Peck, 1960; Zarit & Zarit, 1983) to exclude those with gross cognitive and sensory impairment. There were 22 respondents who agreed to participate but who did not complete the screening interview due to various impairments that would have prevented their further participation (e.g., cognitive or hearing losses).

Since the goal of the study was to target women in need of new social bonds, the selection criteria involved a yearly household income below the median for Indiana senior citizens ($13,800), and a score below the median on a perceived support from friends index or above the median on a loneliness measure. There were 291 women who met these criteria (316 were excluded). A comparison of the final intervention sample with those excluded indicated that both groups were of similar age and education, but the women selected for the study were significantly lonelier, more depressed, of lower income, and had lower perceived support scores. Complete data across all assessment periods was obtained for 265 women. The median age of this final sample was 74 years, their median income was within the $7,000–9,000 category, and their median education was 11th grade; 67% were widowed, 18% were currently married, 12% were divorced, and 3%

were never married. Seventy-four percent of the sample lived alone, and the remaining respondents either lived with their spouse (18%) or with a relative (8%).

Procedure

In the initial case-finding phase of the study, potential respondents were contacted by trained female interviewers via telephone. The project was described as a study concerned with "social life and health" among the elderly. Potential respondents were asked if they were willing to receive further information about the project in the mail and a visit from an interviewer who would explain the project further. Commitment and consent to participate were obtained in writing during the first home visit. This screening interview covered demographic information, the Activities of Daily Living (ADL) scale (Fillenbaum, 1985), the Center for Epidemiological Studies Depression scale (CES-D; Radloff, 1977), and the Perceived Social Support scales from friends and family (PSS-FR and PSS-FA; Procidano & Heller, 1983). All respondents participating in the screening interview received $5.

Respondents then completed a more detailed two-part assessment interview which was administered within a 3-day period. The interview contained further questions about social network contacts and social activities, as well as the Philadelphia Geriatric Center (PGC) Morale scale (Lawton, 1972, 1975), a physical health measure and a measure of stressful events and daily hassles adapted from Murrell and Norris (1984), and a measure of social competence specifically developed for this study (Hogg & Heller, 1990). Respondents were then randomly assigned to staff contact ($n = 238$) or to an assessment only control group ($n = 53$) for 10 weeks.

Respondents receiving staff contact were told by their assessment interviewer that she was interested in maintaining further contact with them and permission was requested for periodic phone calls. Interviewers called twice a week for 5 weeks and then once a week for 5 weeks thereafter. Interviewers were mature women between the ages of 30 and 55. They approached the contact as one would carry on a phone conversation between two friends. Interviewers inquired about the respondent's health and well-being, and discussed topics raised by the respondent. Events of the week and the participant's reaction to the events were discussed. Interviewers also were encouraged to talk about themselves and the events in their lives. If respondents mentioned stressful life events, interviewers attempted to clarify the respondent's perceptions and emotions accompanying the event. Only after a discussion of alternative actions applicable to the event would interviewers directly respond to requests for specific advice. The second and next to last telephone conversation between the interviewer and the respon-

dent was recorded and later coded to determine conversational competence (Hogg & Heller, 1990).

After the first 5 weeks of friendly phone calls from their staff interviewer, respondents received a set of five self-addressed stamped postcards which they were to return after each subsequent phone conversation. The cards asked respondents to indicate the date of the phone call and to check a number of positive or negative adjectives indicating how she felt immediately after the call. The purpose of the cards was to monitor the phone contacts in the next phase of the study when peer dyads were established. They were introduced here to acclimate respondents to returning the cards.

After the 10-week period, at Time 2, a second assessment interview was conducted, after which respondents in the staff contact group were randomly assigned to continue staff contact, to be initiators or recipients of peer telephone contact, or to become no-contact controls. Initiators were asked if they would be willing to take the responsibility to call another woman in the study who was similar to them. Recipients were asked if they would be willing to receive phone calls from a similar other. Calling was explained as a way for women in the study to keep in touch with one another and to make another friend. Hesitancies about calling a stranger were countered by noting that recipients were interested in and had volunteered for further contact, and by pointing to specific similarities between the dyad pair. This could be done because we knew quite a bit about each woman in the study by this point, and while dyads were randomly paired, some similarities between dyad members could be found for each pair. In addition, regular phone contact was maintained with dyad initiators for 2 weeks to check on dyad progress and to make sure that no initial difficulties were developing. For example, some initiators had trouble reaching their partners and needed to be informed about the best times to call. Staff members also clarified any initial miscommunication that may have occurred between dyad partners.

Those who declined to participate in peer dyads were not dropped from the study but were offered continued staff contact. Twenty respondents refused to participate in a peer dyad and were continued by staff in a "refuser" group. Seven participants dropped out of peer dyads after having only one telephone conversation with their assigned partner and were also assigned to continued staff contact in the refuser group. The number of continuing participants included 53 women who participated in assessment interviews only and never received staff or peer periodic phone calls, 49 initiators and 49 recipients of peer contact, 44 women randomly assigned to staff contact, 27 women assigned to staff contact after refusing peer contact, and 49 women who received friendly phone calls from a staff member during the previous phase of the study but who now became members of a second assessment-only control group. Among these par-

ticipants, 6 individuals were subsequently lost due to relocation, illness, or death, leaving us with complete intervention data on 265 women.

After a second 10-week period, at Time 3, all respondents received a third interview, which included a Phone Partner Questionnaire, for those individuals assigned to dyads. Respondents were followed up for another 10 weeks during which there was no regular staff contact for any of the participants. In the peer dyad condition, respondents were encouraged to keep in contact with their telephone partner.

After the final 10-week period, at Time 4, another assessment was conducted. Respondents reported whether they were still in contact with their dyad partner and if so, completed the rest of the Phone Partner Questionnaire.

The design of the study and the specific assessment instruments are outlined in Table I. Only those measures relevant to this report are described in detail.

Measures

Philadelphia Geriatric Center Morale Scale. The PGC (Lawton, 1972, 1975) was used to measure subjective well-being. The revised version of the 17-item scale (Lawton, 1975) contains three factors: agitation, attitude toward aging, and lonely dissatisfaction. In addition, a total morale score was obtained by summing the three subscales. The total morale score (based on yes/no items) ranged from 17 to 34 with higher scores indicating higher subjective well-being. Lawton (1972) reported a split-half reliability of .74 and test–retest reliabilities ranging from .75 to .91. The internal consistency of the PGC was .79 in the present study.

Center for Epidemiological Studies Depression Scale. The CES-D (Radloff, 1977) was used to measure depression. The CES-D is often used to assess current depressive symptoms, particularly depressed mood, in general community populations. The 20-item CES-D used in this study had a 4-point response format based upon symptom frequency in the past week, ranging from *rarely* to *most or all of the time.* Scores could vary from 0 to 60 with high scores indicating higher levels of depression. Murrell and Norris (1984) used the CES-D with an elderly population, reporting an internal consistency of .89 for their community sample. The internal consistency of the CES-D was .79 in the present study. The CES-D has been found to discriminate between inpatient psychiatric and community samples of the elderly (Himmelfarb & Murrell, 1983).

Loneliness. A 7-item loneliness scale developed by Paloutzian and Ellison (1982) for elderly populations was included. The scale has shown high test–retest reliability ($r = .85$), and a correlation of .73 with the UCLA Loneliness Scale. Respondents rated how often they experienced feeling

Table I. Overview of the Project

Case finding and screening	Initial assessment	Intervention	Assessment 2	Intervention	Assessment 3	Follow-up	Assessment 4
Mental status	Social activities	I. Friendly staff telephone contacts	PSS-FA PSS-FR	1. Peer dyad initiators	PSS-FA PSS-FR	No contact	PSS-FA PSS-FR
Income check	Network composition		CES-D	2. Peer dyad receivers	CES-D		CES-D
PSS-FA PSS-FR CES-D	PGC Morale		PGC Morale	3. Staff contacts continue	PGC Morale		PGC Morale
	Affect balance		Loneliness		Loneliness		Loneliness
ADL	Health		Social activities	4. Peer dyad refusers	Social activities		Affect balance
Loneliness	Stressful events		Health	5. Contact discontinuance controls	Health		Health
	Hassles				Phone partner questionaire (dyads only)		Social competence
	Social competence	II. Assessment-only controls		6. Assessment-only controls			Social activities
							Network composition
							Phone partner questionaire (dyads only)

misunderstood, emotionally distant, and lonely on a 4-point scale ranging from *often* to *never*.

Physical Health. Physical health was assessed using the Murrell and Norris (1984) revision of a health measure developed by Belloc, Breslow, and Hochstim (1971). The 20-item scale covers physical complaints and symptoms, difficulties in locomotion, and the presence of chronic conditions or illnesses. Overall physical health scores ranged from 20 to 49 with high scores indicating poor physical health. An internal consistency of .89 was reported for a community sample of elderly (Murrell & Norris, 1984). The internal consistency of the physical health measure was .80 in the present study.

Activities of Daily Living. The ADL was used to measure how well elderly individuals could live independently in the community (Fillenbaum, 1985). The ADL contains 15 items assessing the capacity to perform various instrumental and physical (or bodily care) tasks. Fourteen items have a 3-point scale (1 = cannot do task even with help, 2 = can do task with some help, 3 = can do task without help) and one item has a yes/no scale. ADL scores ranged from 15 to 44 with high scores indicating more independence in living. Test–retest reliabilities (average retest interval 5 weeks) on the ADL are reported to range from .71 to .82. The internal consistency of the ADL was .82 in the present study. In past research the ADL significantly discriminated between samples of community-residing, health clinic-referred, and institutionalized elderly (Fillenbaum, 1985).

Perceived Social Support Scale. The PSS (Procidano & Heller, 1983) assessed the degree to which individuals perceived that they were receiving adequate levels of support from friends (PSS-FR) and family members (PSS-FA) and also served as a screening instrument in the study. The two scales, PSS-FR and PSS-FA, each contain 20 yes/no items. Scores on each scale ranged from 20 to 40, with high scores indicating high perceived adequacy of support. Exploratory factor analyses revealed that there is essentially only one major factor for each scale which examines evaluations of emotional support and general satisfaction with social relationships. Procidano and Heller (1983) reported internal consistencies of .88 for the PSS-FR and .90 for the PSS-FA. The internal consistencies of the PSS scales in the present study were .85 for the PSS-FR and .90 for the PSS-FA. Validity studies are reported in Procidano and Heller (1983) and further validity information can be found in Benson and Heller (1987), Frame (1981), Frazier (1982), and Steinmetz, Lewinsohn, and Antonuccio (1983).

Network Embeddedness. Scales were developed for family and friend networks that examined the number of network ties and estimates of interaction frequency (Thompson & Heller, 1990b). Network embeddedness was examined using both global and weekly estimates. The family embed-

dedness scale consisted of three items. Respondents were asked how often they regularly visited with their relatives (0-never to 6-daily) and whether they had visited and/or been visited by relatives in the past week (3-point scale). Respondents also were asked to list the people they had contact with during the previous month. The third family item was the number of family members they listed. The friend embeddedness scale also consisted of three items. The first item was the number of friends listed on the network size question. The second item was the sum of two questions (each on a 6-point scale) examining regular participation in church activities and community/ club activities which formed a 12-point scale of formal nonkin activities. The final item asked respondents for a weekly estimate of their participation in church or clubs (3-point scale).

RESULTS

Initial Group Comparisons

Multivariate analyses of variance were conducted for intervention Conditions (6), Sites (3), and Conditions by Sites to determine whether groups were equivalent at the start of the study. Table II shows the means and standard deviations of the social support and mental health variables for all four assessment periods. At T1 there were no significant initial differences between intervention groups on any of the measures. However, there were significant initial differences among respondents in the three intervention sites on three variables: income, education, and CES-D. Respondents in the most urban of the three sites had higher income and education and lower depression scores than respondents in the less urban sites. (See Table III.)

Initial correlations between the mental health, social support, and physical health variables are presented in Table IV. There were significant correlations between physical and mental health and between family support and mental health. Respondents in poorer health were significantly more lonely and depressed and had lower morale. Similarly, those with higher family support showed higher scores on all of the mental health variables. Despite significant correlations between perceived friend and family support ($r = .39$) and between friend and family network embeddedness ($r = .20$), perceived friend support was, for the most part, unrelated to mental health at Time 1. On the other hand, controlling for perceived friend support and network embeddedness, participants with higher family support still showed better mental health scores (Thompson & Heller, 1990b).

Table II. Means and Standard Deviations of the Perceived Support and Mental Health Variables for the Four Assessment Periods

	n	T_1		T_2		T_3		T_4	
		M	SD	M	SD	M	SD	M	SD
Dyad initiators	49								
CES-D		31.1	8.4	30.2	8.6	29.9	9.4	31.3	10.1
PGC		28.6	3.9	28.9	3.5	28.3	4.6	28.6	3.9
Loneliness		13.1	2.7	13.2	3.1	12.5	3.3	12.9	3.3
PSS-FA[a]		35.3	5.5	—	—	—	—	35.0	5.4
PSS-FR		33.3	4.6	33.8	4.8	33.6	5.3	34.2	4.8
Dyad receivers[b]	49								
CES-D		31.6	6.8	31.4	7.7	30.0	6.8	30.5	7.6
PGC		27.6	3.3	28.0	3.4	27.6	3.8	27.4	3.4
Loneliness		13.6	3.2	12.8	3.1	12.2	2.7	12.8	2.8
PSS-FA[a]		34.8	4.9	—	—	—	—	34.8	5.3
PSS-FR		34.0	3.9	33.6	5.2	33.3	4.7	33.5	5.1
Staff continues	49								
CES-D		32.0	9.2	30.1	7.3	29.7	8.4	31.2	9.3
PGC		27.9	3.6	28.4	3.9	29.3	3.7	28.3	4.0
Loneliness		13.6	3.5	12.5	3.4	12.1	3.3	13.3	3.5
PSS-FA[a]		35.0	5.0	—	—	—	—	35.5	4.7
PSS-FR		33.3	3.5	32.6	4.2	32.7	4.3	33.3	4.6
Dyad refusers[c]	27								
CES-D		33.0	8.8	31.7	9.5	29.1	7.5	32.5	9.7
PGC		27.4	3.6	27.9	3.3	28.1	3.9	27.8	3.1
Loneliness		13.4	4.3	12.4	2.9	11.8	3.2	12.9	3.4
PSS-FA[a]		35.3	4.3	—	—	—	—	34.9	4.2
PSS-FR		32.5	3.7	32.4	4.7	32.5	4.6	33.0	4.3
Contact discontinued[d]	49								
CES-D		29.7	6.5	30.2	7.9	27.9	7.0	28.9	5.6
PGC		28.6	3.4	28.8	3.9	29.1	3.6	29.1	3.3
Loneliness		12.9	2.7	11.4	2.9	12.0	3.2	11.8	3.1
PSS-FA[a]		35.3	4.7	—	—	—	—	35.9	4.1
PSS-FR		33.9	4.3	34.2	4.8	34.0	4.7	34.0	4.9
Assessment control	53								
CES-D		32.8	8.3	30.6	7.9	29.9	8.0	30.4	7.1
PGC		27.1	3.4	28.1	3.7	27.6	3.5	27.8	3.2
Loneliness		14.2	2.9	12.8	3.1	12.5	3.1	12.7	2.9
PSS-FA[a]		36.2	3.9	—	—	—	—	36.5	3.9
PSS-FR		33.4	4.7	34.3	4.3	34.5	4.6	34.5	4.5

[a]This measure was not administered at T_2 and T_3.
[b]One participant was lost from the Dyad receiver group at T_3, two were lost at T_4.
[c]Three participants were lost from the Dyad refuser group at T_3.
[d]Two participants were lost from the contact discontinues group at T_3.

Intervention Effects

Multivariate analyses of variance were conducted to determine whether there were significant changes in perceived support or mental

Table III. Comparisons Among Respondents in the Three Intervention Sites at T1

	Small town	Small city	Large city
Demographic characteristics			
Age	74.1	74.0	75.4
Education	10.2	10.7	11.1[c]
Income[a]	3.3	3.6	4.6[e]
Health			
Symptoms	31.8	32.2	31.3
Conditions	11.5	11.6	11.5
Functional health	42.0	41.9	42.6
Social support			
PSS-FA	35.0	35.5	35.4
Fam-Emb[b]	0.0	−0.4	0.3
PSS-FR	33.7	33.0	33.6
FR-Emb[b]	0.1	−0.3	0.2
Mental health			
CES-D	32.6	32.8	29.8[d]
PGC	27.4	28.0	28.0
Loneliness	13.4	13.8	13.2

[a]Income category 3 = $6,000–6,999; income category 4 = $7,000–8,999.
[b]Embeddedness scores are sums of 3 items in standard score format.
[c]Difference between groups significance at $p < .05$.
[d]Difference between groups significant at $p < .01$.
[e]Difference between groups significant at $p < .001$.

health among members of the intervention groups compared to assessment-only controls. There were two interventions that occurred in sequence. Staff telephone contacts for all respondents except the assessment-only controls, followed by random assignment to peer, staff, or no further contact (see Table I). To determine the effects associated with each intervention and then their combined effects, changes were examined across each of the in-

Table IV. Correlates of Mental Health Status at Time 1

	Loneliness	Depression	Morale
Health			
Symptoms	.24[b]	.48[b]	−.45[b]
Conditions	.19[b]	.27[b]	−.35[b]
Functional ability	−.14[a]	−.28[b]	.25
Family support			
PSS-FA	−.36[b]	−.27[b]	.18[b]
Family embeddedness	−.22[b]	−.19[b]	.21[b]
Friend support			
PSS-FR	−.11	−.16[a]	.05
Friend embeddedness	−.12	−.04	.08

[a]Significant at $p < .01$.
[b]Significant at $p < .001$.

tervention periods, T1–T2, T2–T3, T3–T4; and then for the entire ex-
perimental period, T1–T3; and again for the entire experiment, T1–T4.
Changes were also examined between intervention groups and within each
group across time. The means and standard deviations for each of these
comparisons are shown in Table II.

Overall, there were no significant social support or mental health
changes for either of the interventions compared to the assessment-only
controls. Nor were there significant differential effects for the two interven-
tions compared to each other. However, there were significant univariate
effects on some of the measures within groups across time indicating
simultaneous changes in both intervention and control groups. From T1 to
T2, respondents receiving friendly phone calls from staff showed improved
morale and less loneliness, but so did assessment-only controls who received
the same in-home assessments as the intervention group but no biweekly
and weekly phone calls. From T2 and T3, respondents assigned to peer
dyads continued to show reductions in loneliness, while those continuing
with staff contact showed further improvements in morale. Mental health
scores of those receiving staff contact improved steadily and significantly
from T1 to T3. The assessment-only controls showed no further im-
provements in mental health at T3, but they maintained the improvements
noted in the previous period. When formal contact was withdrawn during
the follow-up period, gains in morale and loneliness noted earlier were
dissipated, so that by the T4 assessment there were no significant T1–T4 dif-
ferences, expect for the assessment-only controls who continued to main-
tain the reduction in loneliness noted at T2.

Post-Hoc Predictors of Dyad Continuance

Even though the participants in the peer dyad intervention did not
show significant changes in well-being compared to assessment-only con-
trols, a number of dyad partners did become friends, and it would be of
value to future research to determine the characteristics that distinguish
dyads that continued contact from those that terminated early.
Respondents assigned to peer dyads were asked at both T3 and T4 to in-
dicate whether they were still in contact with their dyad partner and if so to
describe that individual on a phone partner questionnaire. At T3, 71% of
the dyads were still in contact, and at T4, 56% were still in contact. As
validation of the still-in-contact measure, we found that dyads members still
in contact at T3 reported having received more emotional support from
phone partners than dyads no longer in contact ($p < .001$). They also pro-
vided more positive ($p < .001$) and less negative ($p < .05$) descriptions of
their dyad partners. Similar results were found at T4 (Hogg & Heller, 1990).

Participants in continuing dyads at T3 also had higher initial levels of perceived support from friends ($p < .04$), a greater number of friends ($p < .03$), and higher levels of functional ability as indicated by ADL scores ($p < .03$) than did members of less successful dyads. These latter differences were not evident at T4.

To determine whether initialy dyad similarity predicted dyad continuance, discriminant analyses were conducted using dyad continuance at T3 and T4 as the criterion variables (Trueba, 1990). Predictors were similarity in demographic characteristics (age, education, income, marital status, and the presence of children), similarity in activity levels (frequency of church and club attendance), social competency levels, and similarity in social competence. Among these variables, the only significant predictor was similarity in social competence. Dyad members still in contact at T3 were more similar in social competence than were those no longer in contact ($p < .05$) (Hogg & Heller, 1990).

DISCUSSION

There is a substantial body of literature to lead one to expect that peer friendships among the elderly should be morale enhancing (Larson, Mannell, & Zuzanek, 1986; Lowental & Haven, 1968). For example, Larson et al. (1986) suggested that while family members are increasingly relied upon for social contact, active leisure occurs more frequently among friends and is more likely to involve reciprocity, a sharing of interests, and positive affect. Yet in this study, an intervention primarily designed to enhance peer friendships did not have a significant impact on psychological well-being. Although one can never be sure about the reasons for lack of significance, it may be instructive to future research to consider why the peer dyad intervention in this study was not effective.

We must recognize at the outset that it is difficult to determine whether the nonsignificant findings represented a weak intervention or insensitive measures. The psychological well-being measures were chosen for their proven stability and validity in discriminating normal affective states from more extreme clinical instances of depression and low morale. The measures may not have been sensitive enough to pick up subtle mood changes or changes in morale and satisfaction that may have occurred as a result of the telephone calls. In describing their dyad partners, participants often were complementary, mentioning similarities that the two shared. Yet, dyads that stayed together through the follow-up assessment showed no differences on the well-being measures compared to those that terminated early. More sensitive measures to consider in future research might include daily mood measures completed as part of a daily diary, or in

response to reminders activated by transponders worn by elderly participants (Larson et al., 1985).

The fact that there were no significant changes in perceived friend support or in network composition as a result of the intervention also might reflect insensitive measures, but this result is more damaging to the experimental hypotheses. It is harder to argue that peer telephone dyads are a viable way of increasing friendships for elderly women if there were no significant changes in perceived friend support as a result of the intervention, and dyad friends were not nominated in significant numbers on the network list or circle of friends that appeared as part of the follow-up assessment. The participants may have indeed enjoyed the telephone contacts and may have thought highly of their dyad partners, but these contacts still may not have had sufficient impact on their sense of well-being or on their regular pattern of social life.

A reasonable possibility is that the intervention may have been too weak to show effects on the well-being measures. Telephone contacts were chosen because we wanted to be of particular help to isolated community-living elderly, many of whom have mobility restrictions that make an active social life difficult to maintain. Still, it is possible that telephone friendships were too limiting and did not allow sufficient contact for the development of intimacy and mutual sharing. Furthermore, the peer dyad intervention involved the construction of new friendships, while the literature on the morale-enhancing value of friendship may primarily refer to relationships that have been ongoing for a number of years, and which may be non-substitutable if lost. Intimacy among friends occurs gradually over time and is most often built upon personal contact and shared activity. Telephone contacts may enhance the maintenance of already established friendships but may simply be an insufficient foundation for friendship development.

The fact that all groups, including the assessment-only control group, showed small but significant changes in morale and loneliness over time may mean that participation in the study and being visited every 3 months by a university-connected interviewer was itself esteem enhancing. Indeed, we have indication that respondents looked forward to their assessment interviews. They often made it difficult for interviewers to leave, and seemed proud of the fact that they had been picked for such an "important" study. They were socially useful again, and someone cared enough about their life experiences and current feelings to inquire in some detail about these matters. While weekly telephone contacts from staff members may have added to this effect with steady improvements in mental health from T1 to T3, telephone contacts with elderly peers did not.

The meager findings concerning the characteristics of continuing dyad members compared to those in dyads that terminated early point to the dif-

ficulty of predicting criteria used by the elderly in developing new friends. It has long been held that friendships develop on the basis of attraction between similar individuals (Byrne, 1961; Byrne, Griffit, & Stefaniak, 1967; Duck, 1973; Lea & Duck, 1982). Yet in this study, only one similarity variable predicted peer dyad continuance. There may have been attenuation due to restrictions in range on the predictor variables, but the findings are sobering because they provide few clues as to how future friendship dyads might be best constituted. We were initially hesitant to assign dyad partners randomly, since friendships clearly do not develop on a random basis. There were several instances of concern among our interviewers about the wisdom of specific pairings of individuals whom they believed would have little in common. But, in fact, these dyads had the same continuation rates as the others, and we could not predict which dyad members would become friends based upon interviewer impressions or similarity data. We must reluctantly conclude that random assignment was as good a method of dyad assignment as any other.

The data on the characteristics of continuing dyad members also reinforce the general finding in the intervention literature that those individuals with the greatest number of assets are most likely to take advantage of the opportunities provided by intervention programs. In this study, individuals were more likely to be in continuing dyad friendships if they initially had a large number of friends, had higher levels of perceived friend support, and were not physically impaired. These were not the most needy elderly women, and unfortunately, we have no evidence from post-hoc analyses that either the peer dyad or staff interventions benefited those who were the most socially isolated or those in poorest functional health or experiencing stressful life events.

A major alternative to consider in evaluating the results of this study is that the enhancement of peer friendships may have been the wrong intervention for this sample. Despite the literature indicating that family members are primarily relied upon for physical care rather that as a source of confidante relationships (Larson et al., 1986), in this study family support appeared to be more important than friend support. Interviewers noted embarrassment and shame among women who reported that family members did not value them or offer assistance. When respondents were asked to rate network members in terms of their intimacy and closeness, family members, on average, composed 75% of the closest group. The majority of our respondents nominated family members, particularly adult daughters, as their confidantes. Furthermore, the correlations reported in Table IV and a separate analysis (Thompson & Heller, 1990b) indicate that it was perceived family support and not perceived friend support that was related to initial levels of mental health. We also have preliminary evidence that low

levels of perceived family support are related to mortality in this group (Vlachos-Weber & Heller, study in progress).

A lesson to be learned from this study is that intervention programs should not be designed relying only on what is known in the extant literature. Data on the role of social ties for the specific intervention sample also are crucial. Campbell (1987) argued for greater attention to "local molar validity" in intervention research because complex interactions of setting factors and treatment variables make it difficult to generalize from one setting to another. Without careful ethnographic study preceding intervention programs, subtle sample characteristics can be missed. In a pilot study conducted before the intervention was undertaken, respondents did talk about the importance of family relationships, but they also admitted to loneliness and low perceived friend support. It was not clear until we collected much more data in the main study that family support may have been more important to their sense of well-being.

Elderly with low perceived family support present a dilemma for intervention. Missing or nonsupportive family members may be nonsubstitutable (Lieberman, 1986). This means that activity and companionship programs for the elderly that increase peer contact still may be unable to make up for missing family support. Interventionists may need to think about how to enhance the supportiveness of existing ties rather than focusing exclusively on building new ones. For example, one strategy for individuals already embedded in family networks but who lack perceived family support would be to address the "support skill" inadequacies of the target individual and network members that prevent effective support seeking and provision (Thompson & Heller, 1990a), as well as the structural aspects of social life that decrease perceived family support. One may not be able to bring affection to family relations that have become strained over the years, but family support may be remediable to the extent that it involves unskilled support provision by family members motivated to do better.

It would be interesting to speculate about the aspects of family support that may be nonsubstitutable. One possibility are family roles, such as those involved in parent–child relationships, and the positive affect and sense of esteem that develops as individuals enact roles over time. Both roles and the esteem that develops through competent role performance may be duplicated by building family-like roles with individuals who might act as surrogate family members. For example, even though children and grandchildren may have moved away, or may no longer look to their elders for encouragement or guidance, there may be other young people in the community who would benefit from a mentoring relationship with an older

woman. More difficult to duplicate, however, is the potential inequity that may develop over time in some parent–child relationships. Parents who sacrifice for their children often expect some return when their children become adults. If these expectations remain unmet and there is not a reciprocity in the perception of caring, a source of frustration and disappointment remains that probably cannot be dissolved by surrogate activities or relationships.

Changing social structures to increase useful social roles for the elderly is another way of increasing the likelihood of more normal social engagement. For example, intergenerational dyads and exchange networks that encourage linkages to the elderly provide opportunities for reestablished social usefulness. The loss of homemaker or work roles does not mean that the elderly need be socially nonproductive if new relationships can be established that would restore lost role functions. Demoralization is reduced if one can maintain a view of self as an active societal contributor. Maintaining meaningful and useful activity also increases the likelihood that family and friends will see the elderly as more interesting companions. Their conversations can move beyond bodily complaints and past glories that have been heard before by network members, to a more varied discussion of current happenings that, after all, comprise the bulk of daily social interchange.

This project was built on the assumption that peer telephone dyads were one way for the elderly to maintain useful social roles by providing indigenous support to one another. Although one can never be certain of how to interpret null findings, in hindsight, we believe that we may have embarked on the wrong intervention. Telephone contacts may provide a weak basis for the formation of new friendships, and family support may be more important than friend support for this population. Both alternatives present dilemmas for intervention. Many elderly with limited resources and mobility restrictions have difficulty maintaining in-person contacts, so ways to overcome physical isolation are needed. At the same time, our data point to the importance of family ties for this age group and challenge us to discover ways in which greater family interconnectedness might be established.

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