

# A Cooperative Communication Intervention for Nursing Home Staff and Family Members of Residents

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**Purpose:** This article reports on a randomized, controlled study of Partners in Caregiving, an intervention designed to increase cooperation and effective communication between family members and nursing home staff. **Design and Methods:** Participants included 932 relatives and 655 staff members recruited from 20 nursing homes, randomly assigned to treatment and control conditions. Parallel training sessions on communication and conflict resolution techniques were conducted with the family and staff in the treatment group, followed by a joint meeting with facility administrators. **Results:** Positive outcomes were found for both family and staff members in the treatment group. Both groups showed improved attitudes toward each other, families of residents with dementia reported less conflict with staff, and staff reported a lower likelihood of quitting. **Implications:** Multiple studies report significant interpersonal stress between family members of nursing home residents and facility staff members. Partners in Caregiving

appears to be an effective way to improve family-staff relationships in nursing homes.

**Key Words:** Long-term care, Family-staff relationships, Communication resolution

In recent years, increased attention has been devoted to the experiences of family caregivers to persons in long-term care facilities. Research has shown that many family members experience considerable stress in negotiating relationships with the nursing home (Bowers, 1988; Gaugler, Leitsch, Zarit, & Pearlin, 2000; Gladstone & Wexler, 2000; Grau, Teresi, & Chandler, 1993; Hertzberg & Ekman, 1996; McLeod & Schwartz, 1992; Tobin, 1995; Whitlach, Feinberg, & Stevens, 1999). Furthermore, it is clear that nursing home personnel also sometimes find their relationships with family members to be challenging (Cohen-Mansfield, 1995; Heiselman & Noelker, 1991; Pillemer, Hegeman, Albright, & Henderson, 1998).

Such problems result in part from structural barriers to cooperation between the two groups. In the most influential theoretical approach to this issue, Litwak (1985) noted fundamental differences between large-scale formal organizations and primary groups (such as families). Formal organizations are characterized by bureaucratic structure, formal rules for behavior, and impersonal ties, whereas families are based on ties of birth and love, concern for special characteristics of individuals, and a life-long period of contact. This theoretical framework suggests that problems emerge when there is a mismatch between the structure of the formal organization and the types of tasks it assumes from families. In nursing homes, the potential for such intergroup conflict is heightened because long-term care facilities represent the classic case of a formal institution seeking to take over primary group tasks (such as personal care) and to fit the performance of

This research was supported by an Edward R. Roybal Center grant from the National Institute on Aging (1 P50 AG11711-01). We are grateful to Benjamin Gottlieb, David Morgan, William Smith, and members of the Cornell Roybal Center Advisory Committee for valuable advice regarding the intervention and research design. Thanks are to Yasamin DiCiccio, Director, and the staff at the Cornell Computer-Assisted Survey Team who performed data collection activities. We would like to acknowledge project trainers Tammie Baker and Isabelle Jensen and research assistant Bonnie Pelenur. Christiann Dean generously shared portions of the *Cooperative Communication between Home and School* program for adaptation in the current project.

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such tasks into a bureaucratic, routinized framework (Litwak, 1985; Litwak, Jessop, & Moulton, 1994).

Although research testing these theoretical ideas has been limited, several studies have revealed a set of obstacles to harmonious staff–family member relationships that are consistent with Litwak’s argument. First, discrepancies between staff and family perceptions of appropriate tasks for each group have been found to be common (Nolan & Dellasega, 1999; Stephens, Ogrocki, & Kinney, 1991), often producing staff–family conflict (Duncan & Morgan, 1994).

The second pattern involves barriers to communication, including: (a) time pressure on the part of the staff (Pillemer, 1996), which can make interactions brief and cursory; (b) the tendency of relatives to be hesitant about offering suggestions and criticism because of fears that such comments might negatively affect the care provided to the resident (Hertzberg & Ekman, 1996); and (c) the fact that staff and residents frequently come from different ethnic groups and socioeconomic classes. As a result of these and related factors, staff and families report that there is often little sharing of detailed information about residents (Ekman & Norberg, 1988; Safford, 1989).

A third obstacle to cooperation is the negative stereotypes families and staff often have of one another. Family members may distrust staff (Krause, Grant, & Long, 1999; Tobin, 1995) and believe that staff need continual monitoring (Duncan & Morgan, 1994; Stull, Cosbey, Bowman, & McNutt, 1997). Concomitantly, staff members often believe that families hold unrealistic expectations for the care that can be provided in nursing homes (George & Maddox, 1989; Heiselman & Noelker, 1991). Studies have documented that families and staff members are sometimes annoyed and angry toward the other group (Foner, 1995; Vinton & Mazza, 1994).

The need for intervention programs to address these problem areas is highlighted by the negative effects of troubled relationships on family members of institutionalized persons. Poor relationships with the staff have been found to be predictive of family members’ depression (Brody, Dempsey, & Pruchno, 1990), anxiety (Pruchno & Kleban, 1993), and emotional stress related to caregiving (Brody et al., 1990; Stephens et al., 1991). Troubled relationships with families are a likely source of distress for staff as well (Pillemer & Hudson, 1993; Wilner, 1994). These results are consistent with the general finding that few aspects of life are more distressing than interpersonal conflict (Sternberg & Dobson, 1987).

In the face of such compelling evidence, one might expect that interventions to address these problems would be widespread; however, this has not been the case. Most programs have focused only on the family, offering individual counseling or support groups for relatives of residents (Hansen, Patterson, & Wilson, 1988; Peak, 2000; Sancier, 1984; Tobin,

1995), or inviting family members to participate in their relatives’ care or serve as volunteers in the facility (Anderson, Hobson, Steiner, & Rodel, 1992; Linsk, Miller, Pflaum, & Ortigara-Vicik, 1988). Such programs typically have not addressed staff perspectives and behaviors, although it is likely that training for both groups is needed to bring about change. Existing programs do not address facility procedures and policies that may generate family–staff problems. The intervention developed in this study (Partners in Caregiving [PIC]) was designed to address each of these issues.

## Conceptual Basis and Hypotheses

Two major mechanisms were used by PIC to bring about changes in family and staff perceptions and behaviors. Most important is the development of improved communication skills on the part of both groups. Research has demonstrated that training health professionals in cooperative communication is effective. For example, several studies have shown that communication skills training leads to improved relationships between physicians and their patients (Greenberg, Doblin, Shapiro, Linn, & Wenger, 1993; Levinson & Roter, 1993; McCormick, Inui, & Roter, 1996). Communication training interventions have also been shown to improve nurse–patient relations (cf. Caris-Vehallen, Kerkstra, & Bensing, 1997). Evidence also exists that communication training can improve relations between families and community institutions, such as schools (Cochran & Dean, 1991; Henderson & Berla, 1994). Although not conducted specifically in the nursing home setting, this line of research suggests that enhancing communication skills may be a promising method for fostering partnerships and reducing conflict and hostility between families and nursing home staff.

The second component of the intervention focused on discussing (and recommending changes in) facility policies and procedures in a joint meeting of family and staff participants with facility administrators. These sessions were expected to increase the sense of involvement and control for participants and create solidarity between staff and families. They provided an opportunity for members of both groups to work toward consensus on changes in facility practices or policies.

## Hypotheses

We hypothesized that family and staff involvement in PIC would lead to positive changes in three domains. First, we expected that participation would improve the quality of relations between staff and family members. Specifically, we hypothesized that treatment participants would report (a) improved experiences with and attitudes toward the other

**Table 1. Components of Partners in Caregiving Workshop**

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- A. *Introduction to Partners in Caregiving (30 minutes)*: Introduces theoretical background and goals of the program. Includes a brief warm-up introduction exercise for participants.
  - B. *Sharing Successful Family–Staff Communication (45 minutes)*: The group participates in a brainstorming exercise in which they share concerns about communicating with the other group. A list of positive aspects of communication within the facility is also generated.
  - C. *Advanced Listening Skills (60 minutes)*: An interactive skill-building session in which participants learn active listening skills, feedback techniques, and how to avoid “communication blockers.”
  - D. *Saying What You Mean Clearly and Respectfully (60 minutes)*: Explores the concept of “I-Messages,” using role-playing exercises to learn how to put them into practice.
  - E. *Cultural and Ethnic Differences (30 minutes)*: Introduces the concepts of cultural and ethnic diversity in the facility, with discussion of how it can affect good communication.
  - F. *Handling Blame, Criticism, and Conflict (60 minutes)*: Provides a seven-step process for preventing and dealing with conflict with the other group. Techniques are practiced using role-play and case study approaches.
  - G. *Understanding Differences in Values (30 minutes)*: Participants explore differences in values of various groups in the nursing home (family, staff, administration, residents). Differences in values and their impact are discussed.
  - H. *Planning a Joint Session for Families, Staff, and Administrators (30 minutes)*: Group members plan, organize, and develop an agenda for a joint meeting.
  - I. *Joint Session (1½ to 2 hours)*: Both groups meet to share what they have learned and discuss their concerns with the administrator. A plan is developed to identify policy and procedural changes and address them as a team.
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group; and (b) decreased problems in face-to-face interaction, including interpersonal conflict. Second, we hypothesized that participation in PIC would reduce staff and family members’ distress. It was hypothesized that for family members, levels of caregiver burden would decrease in the intervention group in comparison with controls, whereas for both family and staff members there would be a decrease in depression. Third, we anticipated that staff would experience a decrease in job stress.

**Subgroup Variations in Benefits.**—Although we hypothesized that all categories of participants would benefit from the intervention, we expected that the effects would be more pronounced in subgroups most likely to experience high levels of stress. The basis for this hypothesis lies in the finding that enhancing positive social interaction and reducing negative interaction have stronger effects on well-being in the face of higher levels of stress (cf. House, Umberson & Landis, 1988; Pillemer & Sutor, 1996). In the case of family members, this leads us to anticipate that the intervention will have greater effects when the relative has Alzheimer’s disease or a related dementia—conditions under which relatives experience greater stress (Kammer, 1994; Levesque, Ducharme, & Lachance, 1999; Stephens et al., 1991). This stress is further compounded because the residents with dementia may not be able to provide information about care needed or received, making effective communication with staff all the more critical (Duncan & Morgan, 1994; Rowles, Concotelli, & High, 1996).

In the case of staff, we anticipated that those in a paraprofessional occupational position—certified nursing assistants (CNAs)—would experience higher levels of stress and therefore receive greater benefit from the intervention. Nurses are more likely to have received some prior training in communication skills

than CNAs (McCallion, Toseland & Freeman, 1999), which would presumably decrease nurses’ risk of high levels on conflict with family members. The greater occupational prestige accorded supervisory staff may reduce the frequency and intensity of their conflict with family members. Finally, because of their higher place in the occupational structure in the institution, nurses are likely to experience greater autonomy and therefore experience less day-to-day job stress than are CNAs (cf. Kelloway & Barling, 1991; Marshall & Barnett, 1993). On these bases, it was anticipated that CNAs would benefit more from the PIC intervention than would nursing personnel.

## Design and Methods

### Intervention Design

The PIC program consisted of two parallel workshop series, one for nursing staff (including registered nurses, licensed practical nurses, and nursing assistants) and one for family members of residents on the same unit. The content of each workshop required a total of approximately 7 hours. For staff, the training typically took place in a single day, whereas for family members training was delivered in two half-day sessions. Three trainers hired by the researchers, all of whom had extensive group leadership experience, conducted the program.

The components of the program (summarized in Table 1) are presented in an order that allows later program modules to build on earlier ones. Based on a review of the communications literature (cf. Burnard, 1992; Golen, 1990; Weaver, 1993), three specific skills were featured in the PIC program:

1. *Active/empathic listening skills.* This training component focuses on identifying “communication helpers” that encourage others to express

their opinions and feelings. In addition, barriers to effective listening are also reviewed, which have been shown to reduce understanding and empathy.

2. *Feedback.* This training component focuses on providing verbal cues to a conversation partner that allow a person to know how a message is received, permitting the speaker to adjust the message as needed.
3. *"I-messages."* The I-message (or "owned" message) technique focuses on using the first-person singular to express a problem or complaint. The use of I-messages reduces blaming (thereby reducing defensiveness on the part of the other person) and encourages others to be more honest about their own feelings because it is non-threatening.

Several modules of the training deal with situations in which cooperative communication is particularly difficult in the nursing home: when there are cultural and ethnic barriers to communication; when a person is faced with blame or criticism; and when values among different groups in the facility affect communication. Each of these modules attempts to foster empathy for members of the other group. The communication skills learned earlier are reinforced and practiced in these more specific situations.

The project ends with the joint session, in which the staff and family participants meet together to discuss issues of concern with the facility administrator. The joint session takes place as soon as possible after both groups complete the training. As in other components of PIC, the joint meeting was carefully structured and included opportunities for sharing of ideas, as well as for prioritization of recommendations for changes in policies and procedures.

### *Sampling Design*

Treatment and control subjects in the study were drawn from staff members and relatives of residents in 20 nursing homes in the Central New York region. The sampling frame for facilities was the membership of the New York Association of Homes and Services for the Aging (NYASHA), the state association of not-for-profit nursing homes. All NYASHA facilities in a nine-county area (a total of 60) were categorized according to metropolitan/nonmetropolitan location and size (80–150 beds vs.  $\geq 151$  beds). Of these facilities, 52 agreed to participate in the study. Twenty facilities were selected for the study by stratified randomization methods, giving an even distribution over these two categories (five facilities in each of the four metropolitan/nonmetropolitan by size groups). Then, facilities in each of the strata were randomly assigned to treatment and control conditions.

A consideration is the exclusively not-for-profit status of sample facilities, which may reduce the

generalizability of the findings. However, although differences may exist between for-profit and not-for-profit homes on some dimensions, there is no evidence that family–staff relations differ systematically according to ownership status. Practice experience suggests that all nursing homes, regardless of ownership, are subject to very similar family–staff pressures.

*Selection of Treatment and Control Units Within Facilities.*—An important design question is the appropriate control group for the study. It should be noted that PIC is conceived of as a "unit-based" intervention. That is, although it was not necessary that all (or even necessarily the majority) of family and staff within a unit take part in the PIC training session for effects to occur, all individuals in a given unit must be exclusively treatment or exclusively control. Considerable diffusion was both expected and encouraged within a unit in the nursing home, with the assumption that participants in both staff and family groups would discuss the techniques learned with persons on the unit unable to attend.

For this reason, the comparison groups within the treatment facilities were staff members and families from a different, physically distinct unit in the same facility, rather than participants randomized on an individual basis into treatment and control groups. The treatment and control conditions were assigned randomly to two units, themselves sampled randomly from all available units in each facility, resulting in 10 treatment units and 10 control units within the treatment facilities. Subacute, rehabilitation, and other specialty care units were excluded for the purpose of comparability.

In addition, we wished to be able to account for potential contamination of the control unit. That is, it is possible that both families and staff members would discuss the intervention with their counterparts in the other unit. Staff members may rotate to a different unit during the course of the study, thus influencing that unit (although all facilities in this study had an official policy of "permanent assignment"). We did not expect that substantial contamination of this kind would occur, but it remained a possibility. For these reasons, we included 10 purely control facilities in the study. From each of these facilities, one control unit was sampled randomly from all units in the facility. In these facilities, staff and family members were recruited for a "survey of staff–family relationships," and no mention was made of PIC, thus providing a second type of control group, distinct from controls in treatment facilities.

*Randomization and Recruitment of Study Subjects for the Intervention.*—All nursing staff members (RNs, LPNs, and CNAs) were recruited for the study from all shifts (day, evening, and night). Temporary staff (e.g., from staffing agencies) were

**Table 2. Flow of Family Members From Recruitment Through Time 3 Follow-up**

		Control	Treatment	Total
Initial contact	Total eligible family members invited	820	388	1,208
	No. unable to contact/no response	123 (15.0%)	32 (8.2%)	155 (12.8%)
	No. of refusals	88 (10.7%)	33 (8.5%)	121 (10.0%)
	Total completed baseline interview	609 (74.3%)	323 (83.2%)	932 (77.2%)
Program implementation	No. participating in training session	—	131 (40.6)	
Time 2 Follow-up	Respondent died or too ill to participate	5 (0.8%)	4 (1.2%)	9 (1.0%)
	Unable to locate/no response	53 (8.7%)	29 (9.2%)	82 (8.8%)
	Refused further follow-up	32 (5.3%)	24 (7.4%)	56 (6.0%)
	Total no. completed Time 2 follow-up	519 (85.2%)	266 (82.4%)	785 (84.2%)
Time 3 Follow-up	Relative died or left before Time 2 follow-up	23 (4.4%)	12 (4.5%)	35 (4.5%)
	Unable to locate/no response	27 (5.2%)	16 (6.0%)	43 (5.5%)
	Refused further follow-up	12 (2.3%)	12 (4.5%)	24 (3.1%)
	Total no. completed Time 3 follow-up	457 (88.1%)	226 (85.0%)	683 (87.0%)

not eligible. A facility liaison (usually the facility social worker) provided families and staff with information regarding the training program and carried out recruitment activities. The family member contacted was the individual identified as the “responsible relative” for each resident. In the treatment units, 41% of family members participated in the training workshops, and 82% of the staff (see Tables 2 and 3). The lower rate of family participation is in part owing to our inclusion of all eligible relatives, many of whom lived a considerable distance from the facility or who visited infrequently.

*Sample Refusal and Retention Rates for Interview Data Collection.*—Tables 2 and 3 present the disposition of sample members at each stage of the study. Because of the unit-based nature of the intervention, interviews were attempted with all families and staff members on the unit, whether or not they participated in the workshop. Interviews were attempted with 1,208 family members, resulting in 932 respondents at Time 1, for a completion rate

of 77%. The retention rate between Time 1 and Time 2 for family members was 84%, resulting in 785 Time 2 interviews. Time 2–Time 3 retention was 87%, resulting in 683 Time 3 family interviews.

Interviews were attempted with 817 staff members, resulting in 655 respondents at Time 1, for a completion rate of 80%. The retention rate between Time 1 and Time 2 for staff was 81%, resulting in 527 Time 2 interviews. Time 2–Time 3 retention was 85%, resulting in 450 Time 3 interviews. Given high staff turnover rates in nursing homes, these retention rates exceeded prior expectations.

*Baseline Equivalence of Treatment and Control Groups.*—Tables 4 and 5 provide descriptive data on the family members and staff at baseline. The treatment and control groups were very similar on most demographic variables at baseline. Despite random assignment, however, family members in the control group were somewhat more likely to be spousal caregivers, whereas members of the

**Table 3. Flow of Staff Members From Recruitment Through Time 3 Follow-up**

		Control	Treatment	Total
Initial contact	Total eligible staff members invited	524	293	817
	No. unable to contact/no response	100 (19.1%)	28 (9.6%)	128 (15.7%)
	No. of refusals	25 (4.8%)	9 (3.1%)	34 (4.2%)
	Total completed baseline interview	399 (76.1%)	256 (87.4)	655 (80.2%)
Program implementation	No. participating in training session	—	209 (81.6)	
Time 2 Follow-up	Respondent died or too ill to participate	2 (0.5%)	0	2 (0.3%)
	Unable to locate/no response	48 (12.0%)	60 (23.4%)	108 (16.5%)
	Refused further follow-up	7 (2.5%)	11 (4.3%)	18 (2.7%)
	Total no. completed Time 2 follow-up	342 (85.7%)	185 (72.3%)	527 (80.5%)
Time 3 Follow-up	Staff left facility before Time 2 follow-up	23 (6.7%)	16 (8.6%)	39 (7.4%)
	Unable to locate/no response	19 (5.6%)	15 (8.1%)	34 (6.5%)
	Refused further follow-up	4 (1.2%)	0	4 (0.8%)
	Total no. completed Time 3 follow-up	296 (86.5%)	154 (83.2%)	450 (85.4%)

**Table 4. Selected Characteristics of Family Members (N = 932)**

Variable	Treatment (n = 323)		Control (n = 609)		Statistic
	n	%	n	%	
<b>Relationship to resident</b>					
Spouse	20	6.2	74	12.2	
Child/child-in-law	203	62.8	358	58.8	
Other relationship	100	31.0	177	29.0	<i>p</i> = .02
<b>Gender</b>					
Female	225	69.7	411	67.5	
Male	98	30.3	198	32.5	<i>p</i> = .50
<b>Education</b>					
Less than high school	30	9.4	53	8.8	
High school graduate	91	28.4	188	31.1	
Post high-school education	95	29.7	171	28.4	
College graduate	104	32.5	192	31.7	<i>p</i> = .15
<b>Race</b>					
White	311	97.0	567	93.5	
Black	4	1.2	19	3.1	
Other	6	1.8	20	3.4	<i>p</i> = .41
<b>Age</b>					
20–40	17	5.3	38	5.3	
41–50	52	16.3	113	18.8	
51–60	116	36.3	181	30.2	
61–70	82	25.5	147	24.5	
70+	53	16.6	121	20.2	<i>p</i> = .28
	Mean <i>SD</i>		Mean <i>SD</i>		
Relative's length of stay (in years)	3.1	3.1	3.1	3.7	<i>p</i> = .76

treatment group were more likely to be adult-child caregivers or other relatives. There were no interactions by caregiver relationship, nor any differences at baseline on any of the dependent variables (tables not shown). The one difference of substantive importance between staff members in the treatment and control groups was race—members of the control group were more likely to be White. This difference was taken into consideration throughout the analysis.

### Data Collection

Staff and family data were collected by means of telephone interviews. The waves of data collection were as follows:

1. *Pretest baseline assessment* (T1) took place within 1–2 weeks after recruitment, before beginning the intervention, for treatment participants, and at the same time for control participants.
2. *Posttest 1* (T2) took place 8 weeks after the intervention had ended, for both treatment and control participants.

**Table 5. Selected Characteristics of Staff (N = 655)**

Variable	Treatment (n = 256)		Control (n = 399)		Statistic
	n	%	n	%	
<b>Occupation</b>					
CNA	174	68.0	263	66.1	
LPN	45	17.6	78	19.6	
RN	37	14.4	57	14.3	<i>p</i> = .81
<b>Gender</b>					
Female	236	92.2	378	94.7	
Male	20	7.8	21	5.3	<i>p</i> = .19
<b>Education</b>					
Less than high school	31	12.3	43	10.8	
High school graduate	101	39.9	179	45.0	
Post high-school education	75	29.6	119	29.9	
College graduate	46	18.2	57	14.3	<i>p</i> = .30
<b>Race</b>					
White	180	71.1	326	81.7	
Black	60	23.7	53	13.3	
Other	13	5.1	20	5.0	<i>p</i> = .003
<b>Age</b>					
18–30	71	28.3	97	24.5	
31–40	84	33.5	125	31.6	
41–50	64	25.4	109	27.5	
51+	32	12.8	65	16.4	<i>p</i> = .60
	Mean <i>SD</i>		Mean <i>SD</i>		
Length of nursing home work (years)	4.9	5.8	5.4	5.3	<i>p</i> = .25

3. *Posttest 2* (T3) took place 6 months after the intervention for both treatment and control participants.

Two special conditions affected the pattern of interviews. Staff members who left employment in the nursing home after Time 1 received an abbreviated Time 2 interview and were not interviewed in Time 3. Family members whose relative died between Time 1 and Time 2 also received an abbreviated Time 2 interview and were not interviewed at Time 3.

### Measures: Family Outcomes

**Interpersonal Conflict.**—The Interpersonal Conflict Scale (Pillemer & Moore, 1989) asks how frequently the family member experiences arguments or conflicts with staff members over the following items: personal care, meals/food, administrative rules, laundry/clothing, residents' appearance, toileting, and attentiveness to residents' needs (never, once a month, a few times a month, a few times a week, or every day). The reliability coefficient (alpha) for the scale is .79.

**Staff Behaviors Scale.**—The Staff Behaviors Scale was developed by the authors to measure family

perceptions of how staff members behave toward them (Pillemer et al., 1998). The three items were how often staff provide them with news, encouragement, or suggestions. Response categories are never, rarely, sometimes, almost always ( $\alpha = .82$ ).

**Staff Empathy Scale.**—The Staff Empathy Scale, also developed by the authors (Pillemer et al., 1998), asked families the degree to which they perceive staff as understanding, easy to talk to, or helpful, with response categories never, rarely, sometimes, almost always ( $\alpha = .87$ ).

**Caregiver Burden.**—Caregiver burden was measured using a shortened version of the Zarit Burden Interview (Zarit, Todd, & Zarit, 1986). Six items from the scale were used that are particularly relevant to nursing home caregivers ( $\alpha = .66$ ).

### *Measures: Staff Outcomes*

Two staff outcomes were measured using questions identical to those asked of family members: the conflict scale, with the word “family” substituted for “staff” ( $\alpha = .86$ ), and the Center for Epidemiologic Studies-Depression Scale (CES-D) depression scale ( $\alpha = .80$ ).

Additional measures for staff included the following:

**Family Behaviors Scale.**—The Family Behaviors Scale measured staff perceptions of how family members behave toward them (Pillemer et al., 1998). Staff reported how frequently family members: treat you with respect, are rude with requests, smile and greet you, and ignore you or brush you aside. Response categories are never, rarely, sometimes, almost always ( $\alpha = .69$ ).

**Family Empathy Scale.**—The Family Empathy Scale asked staff the degree to which family members: understand how much time it takes to do my job, are mostly concerned about their own needs, and are sensitive to my feelings ( $\alpha = .548$ ).

**Burnout.**—Job burnout was measured by the Depersonalization Subscale of the Maslach Burnout Inventory (Maslach, 1982), modified by Pillemer and Moore (1989) for use with nursing home staff ( $\alpha = .592$ ).

**Intention to Quit.**—Likelihood of leaving employment in the nursing home was measured by a single item that asked: “Thinking about the next 12 months, how likely do you think it is that you will decide to quit your job?” (very likely, likely, not too likely, not at all likely).

### *Statistical Models and Methods*

Our interest is in evaluating effects of the intervention by looking at treatment group differ-

ences for the family and staff outcomes described previously, controlling for important influences on family and staff perspectives. All outcome variables were measured at baseline before the intervention and at follow-ups 2 and 6 months after the intervention. A  $3 \times 3$  repeated-measures design (treatment  $\times$  time) thus forms the core of the statistical models for evaluation. The key tests of whether the intervention has had an effect are the test of the time  $\times$  treatment interaction and specific, preplanned contrasts partitioned from that interaction.

Analysis of the data found no significant differences in changes over time in key variables between the two types of control units (those in control facilities and those in treatment facilities). In the presentation of the results, we show only contrasts in which the two control groups are combined. The program was evaluated in terms of its effects at each of the two follow-up assessments and for effects averaged over those two assessments. Because the program is of short duration and moderate intensity, effects might be expected to be strongest at the first follow-up, nearest to the time of intervention. The examination of the second follow-up gives an indication of the extent to which effects are sustained over a longer period of time. It is also possible that certain effects may take a longer time after involvement with the program to be manifested and will be seen only at Time 3. The test of effects averaged over the two follow-up assessments provides the best evidence of beneficial consequences of the program that are sustained over time and is the most powerful test of those effects.

We also examined the effect of facilities. This was done under two different assumptions: facilities regarded as levels of a random factor (facilities regarded as sampled from a larger population of facilities); and facilities regarded as levels of a fixed factor. In both cases, facilities differed significantly, but the effect on the evaluation of the intervention was negligible. Facilities as levels of a classification factor were excluded from the final models reported here.

All analyses were carried out in general linear mixed models, with time included as levels of a fixed factor and individuals as levels of a random factor. By using mixed model methods rather than basic repeated measures, observations could be included for which data are missing at one or more time points.

An array of variables representing background characteristics of the patient and family members was examined in addition to treatment and time to carry out a thorough examination of potential confounding influences (race, age, gender, and socioeconomic status of the family member, the relationship of the family member to the patient; race, age, gender, and socioeconomic status of the staff member, whether the staff member has ever

**Table 6. Treatment Effects for Family Outcome Measures**

Variable	Baseline Mean	2 mos Mean	6 mos Mean	Change Over Time		
				Baseline to 2 mos Mean ( <i>p</i> -value)	Baseline to 6 mos Mean ( <i>p</i> -value)	Baseline vs. (2 mos + 6 mos)/2 Mean ( <i>p</i> -value)
<b>Staff Empathy Scale</b>						
Control	16.18	15.91	16.06	-0.27 (.03)	-0.12 (.36)	-0.20 (.08)
Treatment	15.87	16.03	16.13	0.16 (.33)	0.26 (.16)	0.07 (.30)
Difference (T-C)	-0.31	0.12	0.07			
Treatment effect ( <i>p</i> -value)				.04	.09	.03
<b>CES-D Scale</b>						
Control	11.16	11.12	11.50	-0.04 (.77)	0.34 (.06)	0.15 (.34)
Treatment	11.04	11.00	10.86	-0.04 (.86)	-0.18 (.46)	-0.11 (.59)
Difference (T-C)	-0.12	-0.12	-0.64			
Treatment effect ( <i>p</i> -value)				.98	.09	.31
<b>Conflict Scale, relative without dementia</b>						
Control	1.71	2.33	1.85	0.62 (<.001)	0.14 (.43)	0.38 (.001)
Treatment	1.66	2.25	2.13	0.58 (.01)	0.46 (.64)	0.52 (.06)
Difference (T-C)	-0.05	-0.09	0.27			
Treatment effect ( <i>p</i> -value)				.88	.29	.58
<b>Conflict Scale, relative with dementia</b>						
Control	1.53	1.96	1.97	0.43 (.009)	0.45 (.01)	0.44 (.003)
Treatment	1.93	1.80	1.88	-0.12 (.59)	-0.05 (.85)	-0.09 (.68)
Difference (T-C)	0.40	-0.16	-0.09			
Treatment effect ( <i>p</i> -value)				.05	.12	.04

Notes: T-C = treatment minus control; CES-D = Center for Epidemiologic Studies-Depression Scale.

cared for a relative; and metropolitan vs. non-metropolitan location of the nursing home facility). Homogeneity of regressions was examined for all covariates, both to ensure correct interpretation of main effects and as part of the examination where intervention effects were strongest. None of these additional variables significantly altered the treatment effects, and the final models shown in the results included only treatment and time.

Our focus was not only on the detection of any overall effects of the intervention, but also on the examination of whether the effects of the intervention were stronger for groups under greater stress. For families, the variable examined was whether the resident has dementia; for staff, it was the effect of being a nurse versus being a CNA. This issue was examined through tests of the interaction of treatment and time with the third variable.

For each outcome variable in the results tables (Tables 6 and 7), the left-hand side shows the adjusted means for the treatment × time structure. The right-hand side shows the change in means for each treatment group over time and the probabilities associated with the test of these mean differences. The bottom row on the left gives the difference between groups for each time point. The bottom row on the right gives the probabilities for the tests of treatment effects for partitioned interaction contrasts from the overall treatment × time interaction (defined by the row and column headings).

## Results

### *Effect of Intervention on Family Outcomes*

Perception of staff empathy increased from baseline to the 2-month posttest, and again to the assessment at 6 months, for those in the treatment group but not for controls. This resulted in a treatment effect as can be seen in the bottom row for the Staff Empathy Scale in Table 6 for the first follow-up, the second follow-up (as a trend), and for the test across both posttests. In addition, a decline in depression measured by the CES-D scale from baseline to 6 months relative to an increase for controls approached significance. There was no statistically significant impact of the intervention on the Interpersonal Conflict Scale, the Staff Behaviors Scale, or the Caregiver Burden Scale.

We analyzed an additional model for each outcome to determine whether the effects of the intervention were greater for families in which the relative had dementia. These analyses showed one interaction effect. As shown in the bottom two sets of rows in Table 6, for the nondementia group, staff-family conflict increased for both treatment and control groups, with a particularly marked increase between baseline and 2 months. For the dementia subgroup, however, conflict increased for controls, but remained unchanged for the treatment group, resulting in a treatment effect at 2 months and across both follow-up assessments.

Table 7. Treatment Effects for Staff Outcome Measures

Variable	Baseline Mean	2 mos Mean	6 mos Mean	Change Over Time		
				Baseline to 2 mos Mean ( <i>p</i> -value)	Baseline to 6 mos Mean ( <i>p</i> -value)	Baseline vs. (2 mos + 6 mos)/2 Mean ( <i>p</i> -value)
<b>Family Behaviors Scale</b>						
Control	11.34	11.08	11.26	-0.25 (.27)	-0.07 (.57)	-0.16 (.11)
Treatment	11.03	11.17	11.16	0.14 (.36)	0.12 (.43)	0.13 (.32)
Difference (T-C)	-0.31	0.09	-0.10			
Treatment effect ( <i>p</i> -value)				.04	.33	.08
<b>How likely to quit job in next 12 months?</b>						
Control	1.74	1.84	1.86	0.10 (.10)	0.12 (.06)	0.11 (.04)
Treatment	1.81	1.71	1.78	-0.10 (.18)	-0.03 (.66)	-0.07 (.30)
Difference (T-C)	0.07	-0.13	-0.08			
Treatment effect ( <i>p</i> -value)				.04	.14	.04
<b>Job burnout</b>						
Control	9.98	10.38	10.40	0.40 (.003)	0.42 (.003)	0.41 (<.001)
Treatment	9.86	9.87	10.11	0.01 (.95)	0.25 (.20)	0.13 (.41)
Difference (T-C)	-0.12	-0.51	-0.29			
Treatment effect ( <i>p</i> -value)				.08	.46	.15

Notes: T-C = treatment minus control.

### Effect of Intervention on Staff Outcomes

Significant treatment effects were observed for two staff outcome variables. Perceptions about the supportiveness of family behaviors improved between baseline and 2 months for the intervention group and declined for the control group (Table 7). This effect also approached significance when tested jointly over the two follow-up assessments. For predicted likelihood of quitting the job in 12 months, a decline occurred in the treatment group between baseline and 2 months, whereas an increase occurred in the control group. In a finding that approached significance, job burnout increased in the control group between baseline and 2 months, but remained stable for the treatment group. The interaction analyses comparing CNAs versus nurses revealed no substantively important differences in effects between these groups on any dependent variable in the analysis.

In analyses including adjustment for race, nurse employment status, age, and sex of the staff member, none of the relationships presented previously was substantially changed, although in several instances the *p* value increased by an amount in the range of .01 points.

### Discussion

The PIC intervention was designed to improve family-staff relationships in nursing homes. The intervention expanded on prior efforts in five ways. First, the intervention design was based on a clearly articulated conceptual framework derived from both theory and empirical research on interpersonal

interactions in long-term care settings. Second, the study was conducted in a relatively large number of facilities, allowing us to examine effectiveness across a range of settings. Third, the training involved both family and staff members on particular units where they interact, rather than training only one of the two groups. Fourth, the program engaged participants in a dialogue with one another and with facility administrators regarding changes that would facilitate better family-staff relationships. Finally, the study focused on outcomes for both staff and family members.

Overall, the results of the treatment-control comparisons are encouraging for both staff and family members. The strongest effects were found for both groups' perceptions of one another: Family members perceived greater empathy on the part of staff, and staff viewed family behaviors toward them as more positive. Staff members in the treatment group improved in their feelings toward the job, as indicated by a reduction in likelihood of quitting. Finally, the fact that reports of conflict declined among family members whose relatives had dementia is of importance, given that such conflict is a strong predictor of well-being among caregivers, as well as the general population during periods of high stress (cf. Schuster, Kessler, & Aseltine, 1990).

It is worth noting that these findings are consistent with overwhelmingly positive subjective evaluations of the PIC intervention by participants. Ninety-eight percent of participants reported that they could relate the material covered to their own experiences in the nursing home, and 93% responded that they felt comfortable in the training program. Ninety-two percent of participants rated the program as

excellent or good, and 96% reported that they would recommend the program to others in their situations. Such a response is highly encouraging because it suggests that similar interventions are likely to be both welcomed and effective across a range of long-term care settings.

The study had several limitations that require mention. Treatment effects were not found on all outcome variables, and in some cases the effect size was modest. Therefore, it is possible that a higher "dosage" may be necessary to bring about stronger effects. Potential modifications include increasing the length of the family and staff trainings or promoting additional joint meetings. Such increased intensity also might have moved the borderline findings to statistical significance. However, given the current difficulties in nursing home staffing, extending the training beyond the 8–10 hours offered in PIC may be problematic because of scheduling difficulties and additional expense. All of the intervention facilities were unanimous in their view that releasing staff for a longer period of initial training would be a hardship for the facility. Family members also noted that the time commitment was the maximum they could accomplish in the course of a week. Therefore, extending the workshop training time could be attempted, but seems unlikely to succeed given real-world constraints on participants.

It should also be noted that the strongest effects generally were found on the first posttest, with diminishing strength at the 6-month posttest. This suggests that the impact of PIC diminishes over time, perhaps because the skills require additional practice and reinforcement to be maintained. This pattern of findings suggests that providing additional "booster sessions" after the initial workshops would be beneficial. Because they would occur some weeks after the initial training, the time commitment might not be perceived as burdensome.

A further limitation of the study is its exclusive focus on staff and family outcome measures. Clearly, it is hoped that the PIC intervention had indirect benefits for *residents*, through improved care resulting from better communication between family and paid caregivers. Greater family comfort in the facility could also make daily interactions with residents more pleasant and fulfilling. Resident-level data collection was beyond the scope of the present study, but should certainly be a major priority for future researchers.

A final limitation relates to the component of PIC that encouraged discussion of policies and procedures that hinder family–staff communication. Although we have descriptive data on the content of the joint meeting, project resources did not permit tracking of the actual implementation of policy or procedural changes. We do know that PIC resulted in some kind of innovation in all of the 10 treatment facilities, ranging from the establishment of a family council to posting staff photographs on a bulletin

board. Participants reported that they found the joint meeting useful and productive. However, future research should systematically track the role of PIC in structural changes in the facility and their impact in turn on treatment outcomes.

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Received May 14, 2002

Accepted August 8, 2002

Decision Editor: Laurence G. Branch, PhD