Informal Help in the Assisted Living Setting: A 1-Year Analysis*

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Using statewide data from Oregon (N = 596 at baseline), this study compares informal help received by assisted living (AL) and nursing home (NH) residents over a 1-year period. The analysis also identifies predictors of informal help among AL and NH residents with an expanded version of the Behavioral Model. Instrumental assistance (i.e., help with shopping, appointments, transportation) was more prevalent in the AL setting throughout the analysis. Regression models found multiple predictors of informal help among AL and NH residents (i.e., predisposing, enabling, and need characteristics). The results imply that the AL setting facilitates informal help provision; however, predictors of support are varied and require greater attention in future research.

Over the past two decades, awareness of the different sources of care for disabled older adults has steadily increased. In particular, much research has explored informal (i.e., unpaid) support networks that provide the bulk of care to the chronically impaired elderly (Abel, 1987; Arno, Levine, & Memmott, 1999; Doty, 1986; Shanas, 1979). These support networks consist of relatives, friends, neighbors, and community volunteers. Informal care also encompasses a wide range of tasks, such as bathing, dressing, toileting, transferring in and out of bed, and assistance with walking, that are known as “activities of daily living” (ADLs), as well as assistance with shopping, medications, transportation, arrangement of appointments, and preparation of meals, known as “instrumental activities of daily living” (IADLs). Other kinds of help include supervision, psychological support, social and recreational activities, spiritual assistance, and even bureaucratic mediation (Albert, 1991).

Most work on informal support focuses on elderly relatives living at home. Much less studied is the informal care that families provide to people living in congregate group settings, though a few efforts have recognized that informal care occurs and has serious implications for family members and residents in skilled nursing facilities (Aneshensel, Pearlin, Mullan, Zarit, & Whitlatch, 1995; Gaugler, Leitsch, Zarit, & Pearlman, 2000; Maas et al., 2000; Max, Webber, & Fox, 1995; Penrod, Kane, & Kane, 2000). How informal care provision is affected in other long-term care environments (such as assisted living) is not understood.

This study has two objectives. First, we compare informal help over a 1-year period among assisted living and nursing home residents. In the current analysis, informal help refers to the uncompensated help and assistance older adults receive from family members or friends. Second, we determine the relevant predictors of informal help for assisted living and nursing home residents over a 1-year study period.

Assisted Living as a Concept

In several ways, the boundaries between home and institutional care have become blurred into a new form of congregate care, often called assisted living (AL). Shaped by state licensing laws and the market (Mollica, 2000), AL is generally defined as a residential setting not licensed as a nursing home (NH) where personal care and routine nursing services are delivered and arranged on a scheduled or unscheduled basis (Kane, 1995; Kane & Wilson, 1993). At their most “homelike,” ALs are composed of privately occupied apartments with independence-enhancing features such as full bathrooms, kitchenettes, and locking doors. Residents control their space, furnishings, time, activities, and care plans within those apartments. More study is needed on how AL affects older adults’ functioning and quality of life, though recent research shows benefits to residents and no harm related to the greater amounts of privacy, more normal environments, and lesser surveillance in AL (Frytak, Kane, Finch, & Kane, 2001; Mitchell & Kemp, 2000; Pruchno & Rose, 2000).

Informal Care at Home and in NHs

Informal care is usually conceptualized as the unpaid provision of assistance to an elderly relative living at home and as the only type of help received by that older person. Whereas the latter is true in many instances, some informal care providers or elderly care recipients turn to outside services to secure additional help (Whitlatch & Noelker, 1996). Family members’ involvement tends to continue, however. Particularly when the care recipient remains in the community and utilizes in-home services (e.g., home health, in-home companion), informal help provided by family members and friends is not replaced (Hanley, Wiener & Harris, 1991; Lyons & Zarit, 1999; Noelker & Bass, 1989).

However, the provision of informal help changes with the transition to a NH. Empirical studies of Alzheimer’s patients and their caregivers found that older adults who move to a NH are likely to receive less informal assistance (in terms of fewer hours) (Max et al., 1995; Moss, Lawton, Kleban, & Duhamel, 1993). Although the amount of informal help decreases, family members do assume joint responsibility with staff on a wide range of tasks, including personal (e.g., grooming), instrumental (e.g., laundry, transportation), and socioemotional (e.g., writing letters, maintaining resident’s apartment, dealing with family guilt feelings) care. There also is perceived ambiguity in the subdivision of tasks between family members and NH staff (Rubin & Shuttlesworth, 1983; Schwarz & Vogel, 1990).

A few studies have attempted to identify determinants of informal help following a move to a NH. Max and her colleagues...
analyze informal help in AL and NH settings for several reasons. First, it offers the opportunity to build on existing conceptualizations of factors that may predict informal help. Moreover, use of the model in the context of this study may provide important refinements to the existing literature: namely, that informal care continues even after older adults move from their homes to long-term residential settings.

In keeping with previous research (Aneshensel et al., 1995; Antonucci, 1994), we hypothesized that two predisposing characteristics, age and female gender, would predict receipt of a wider range of informal help in both AL and NH settings (Aneshensel et al.; Antonucci). As enabling factors, we considered variables that reflect the availability and maintenance of links to potential informal help providers, such as marital status (i.e., the availability of a spouse increases the likelihood of informal help provision), a nearby family member, whether the resident was admitted from the community, and use of formal health services either provided within the facility (i.e., “contract” service use) or from an outside source (i.e., “outside” service use). All of these variables were expected to positively influence informal help, because these factors have been strongly linked to the range and intensity of family care provision in the community and in long-term care settings (Aneshensel et al.; Gaugler, Leitsch, et al., 2000; Noelker & Bass, 1989). We also speculated that a shorter length of stay in the facility would enable informal help, because other research has shown that the longer the length of stay in NHs, the less often family members visit (Gaugler, Leitsch, et al.). Finally, education was expected to play an important enabling role in informal support provision; those residents with a higher level of education and greater access to financial resources may be more likely to seek out formal sources of care (Aneshensel et al.).

In order to more accurately predict informal help in various residential long-term care settings, the Behavioral Model was expanded to consider facility-level characteristics that may enable informal help (i.e., facility enabling characteristics). For example, the size of the particular facility, coupled with its geographic location (i.e., urban, rural, in a metropolitan area) may affect informal help. It is possible that older adults who reside in smaller facilities and in rural areas may depend more on informal care, as these residences rely on various family members and friends to provide supplemental help to achieve necessary levels of service provision (Gaugler, Kane, & Kane, in press).

Finally, need characteristics were considered that have been inextricably linked with the support provided by informal caregivers in other research (Aneshensel et al., 1995; Max et al., 1995). These include ADL needs, poor self-rated health, impaired cognitive functioning, and positive psychological well-being, all of which were expected to positively affect informal help. Residents’ perceptions of staff also were considered as a need characteristic. We hypothesized that if residents perceived staff negatively, such perceptions would mobilize invested family members to remain more involved in care because of their concern over the adequacy of staff assistance (see Friedemann, Montgomery, Maiberger, & Smith, 1997).

Methods

Sample

Participants were identified in a 1-year longitudinal study of AL and NH residents (Frytak et al., 2001). The sample included...
38 of the 39 licensed AL facilities in the state of Oregon as of July 1995. Of the 156 Medicare-certified NHs in the state, 31 facilities were randomly sampled. In Oregon, all licensed AL comprises self-contained apartments with single occupancy (unless by genuine choice), locking doors, full bathrooms, and kitchenettes. Thus, AL in Oregon is closer to an ideal of “home” than AL settings in other states that resemble board and care homes, with shared occupancy and no individual bathrooms and kitchenettes (Frytak et al.).

One third of the residents in each AL facility and two fifths of residents in NHs were randomly sampled and included in the original study. Residents who were comatose or under the age...
Facility enabling characteristics

Residents at baseline (T1), 6 months (T2), and 1 year (T3). Staff

Data

156 NH residents. For this reason, 125 AL and 454 NH residents had to be excluded only in residents who could complete interviews themselves. For these experiences influence informal help, we were interested in NHs) were deemed too cognitively impaired to complete in-

initially available for study, many of these individuals (particularly in NHs) were deemed too cognitively impaired to complete in-

enough for interview). These various factors led to the exclusion and loss of 115 AL residents and 56 NH residents over a 6-month period, resulting in a T1-T2 sample size of 325 AL and 100 NH residents. Similarly, from T1 to T3, 198 AL and 82 NH residents were either lost or excluded from the baseline sample, resulting in a 1-year sample of 242 AL and 74 NH residents.

Measures: Dependent Variable

At each time, respondents were asked, “In the past few months has any family member or friend helped you by: cleaning your apartment unit, doing personal laundry, helping you with personal care, making or arranging doctor appointments, doing shopping or errands, helping you with business matters, providing transportation?” The 7 items were coded 0 (did not help) and 1 (did help) and were then summed to create an informal help score representing the range of assistance family members and friends provided.

At baseline, residents in AL and NH reported statistically similar proportions of informal help with cleaning the apartment unit or room (9.8% vs. 5.1%, respectively), laundry (20.7% vs. 17.9%, respectively), personal care (6.4% vs. 7.1%, respectively), shopping and errands (68.9% vs. 62.6%, respectively), and business matters (73.0% vs. 67.9%, respectively). However, a greater proportion of AL residents indicated informal help with arranging appointments ($\chi^2 [1, n = 270] = 18.28, p < .001$; AL, 50.5% vs. NH, 30.8%) and transportation ($\chi^2 [1, 427] = 57.12, p < .001$; AL, 73.0% vs. NH, 39.7%).

Measures: The Expanded Behavioral Model

Predisposing characteristics. Descriptive baseline information on independent variables is presented in Tables 1 and 2. Predisposing characteristics included information on gender and age, and this information was available for each resident.

Table 1: Descriptive Information for Behavioral Model Characteristics: Interval Variables (T1)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Assisted Living (n = 440)</th>
<th>Nursing Homes (n = 156)</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Predisposing characteristics</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age (in years)</td>
<td>M</td>
<td>SD</td>
<td></td>
</tr>
<tr>
<td></td>
<td>84.61</td>
<td>7.06</td>
<td>11.66**</td>
</tr>
<tr>
<td>Number of living children</td>
<td>2.15</td>
<td>1.66</td>
<td>2.12</td>
</tr>
<tr>
<td>Number of contract services</td>
<td>6.72</td>
<td>3.42</td>
<td>12.31</td>
</tr>
<tr>
<td>Number of outside services</td>
<td>0.31</td>
<td>0.99</td>
<td>0.10</td>
</tr>
<tr>
<td>Facility enabling characteristics</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of units</td>
<td>61.39</td>
<td>31.01</td>
<td>100.96</td>
</tr>
</tbody>
</table>

Table 2: Descriptive Information for Behavioral Model Characteristics: Categorical Variables (T1)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Assisted Living (n = 440)</th>
<th>Nursing Homes (n = 156)</th>
<th>***p &lt; .001</th>
</tr>
</thead>
<tbody>
<tr>
<td>Predisposing characteristics</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender (women)</td>
<td>375 85.2</td>
<td>112 71.8</td>
<td>13.91***</td>
</tr>
<tr>
<td>Marital status (married)</td>
<td>15 3.4</td>
<td>24 15.4</td>
<td>27.01***</td>
</tr>
<tr>
<td>Whether a family member lives</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>within an hour’s drive</td>
<td>296 67.3</td>
<td>92 59.0</td>
<td>4.37</td>
</tr>
<tr>
<td>Length of stay of more than 6 months</td>
<td>334 75.9</td>
<td>122 78.2</td>
<td>0.34</td>
</tr>
<tr>
<td>Resident was admitted from community</td>
<td>275 62.5</td>
<td>37 23.7</td>
<td>68.58***</td>
</tr>
<tr>
<td>Facility enabling characteristics</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Location</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>193 43.9</td>
<td>89 57.1</td>
<td>7.78**</td>
</tr>
<tr>
<td>Metro</td>
<td>178 40.5</td>
<td>62 39.7</td>
<td>15.79***</td>
</tr>
<tr>
<td>Urban</td>
<td>67 15.2</td>
<td>5 3.2</td>
<td>0.04</td>
</tr>
</tbody>
</table>

*p < .05. **p < .01. ***p < .001.

of 65 years were excluded. In addition, residents with a length of stay of less than 21 days were eliminated in initial recruiting. These criteria resulted in a baseline sample of 605 AL and 610 NH residents in the original study.

Although there were a considerable number of residents initially available for study, many of these individuals (particularly in NHs) were deemed too cognitively impaired to complete interviews themselves. In these instances, proxy interviews were administered to other family members, staff, or friends in the original analysis. However, because a major focus of the present study was on the subjective experiences of residents and how these experiences influence informal help, we were interested only in residents who could complete interviews themselves. For this reason, 125 AL and 454 NH residents had to be excluded from the original sample, resulting in a sample of 440 AL and 156 NH residents.

Data

A variety of data were collected through interviews with residents at baseline (T1), 6 months (T2), and 1 year (T3). Staff questionnaires also were administered at each data point to gather information on service utilization and residential history. Finally, AL administrators were interviewed at baseline and were queried on various facility characteristics.

During the course of the analysis, additional residents either required a proxy or were lost to follow-up because of death, relocation, or other reasons (e.g., the resident was not available for interview). These various factors led to the exclusion and loss of 115 AL residents and 56 NH residents over a 6-month period, resulting in a T1-T2 sample size of 325 AL and 100 NH residents. Similarly, from T1 to T3, 198 AL and 82 NH residents were either lost or excluded from the baseline sample, resulting in a 1-year sample of 242 AL and 74 NH residents.

Measures: Dependent Variable

At each time, respondents were asked, “In the past few months has any family member or friend helped you by: cleaning your apartment unit, doing personal laundry, helping you with personal care, making or arranging doctor appointments, doing shopping or errands, helping you with business matters, providing transportation?” The 7 items were coded 0 (did not help) and 1 (did help) and were then summed to create an informal help score representing the range of assistance family members and friends provided.

At baseline, residents in AL and NH reported statistically similar proportions of informal help with cleaning the apartment unit or room (9.8% vs. 5.1%, respectively), laundry (20.7% vs. 17.9%, respectively), personal care (6.4% vs. 7.1%, respectively), shopping and errands (68.9% vs. 62.6%, respectively), and business matters (73.0% vs. 67.9%, respectively). However, a greater proportion of AL residents indicated informal help with arranging appointments ($\chi^2 [1, n = 270] = 18.28, p < .001$; AL, 50.5% vs. NH, 30.8%) and transportation ($\chi^2 [1, 427] = 57.12, p < .001$; AL, 73.0% vs. NH, 39.7%).

Measures: The Expanded Behavioral Model

Predisposing characteristics. Descriptive baseline information on independent variables is presented in Tables 1 and 2. Predisposing characteristics included information on gender and age, and this information was available for each resident.
Enabling characteristics. Education was assessed on an 8-point scale ranging from 0 (less than 8th grade) to 7 (postgraduate, professional degree). Residents also were queried on their marital status, number of children, and whether a family member lived within an hour’s drive of the facility. Length of stay was available for each participant at T1 and was coded as 0 (length of stay less than 6 months) or 1 (length of stay more than 6 months). Participants’ location prior to moving to the AL or NH facility was collected. Residents received a 1 if they were admitted from the community (e.g., home) and a 0 if they were admitted from another residential or acute-care setting (e.g., hospital, NH). Two summary measures of formal service utilization were created. Staff were asked whether a resident received any of 19 types of services (ADL care, IADL care, and nursing services) as part of their contract (i.e., contract service utilization) or through an arrangement with an outside agency (i.e., outside service utilization).

Facility enabling characteristics. The size of each AL and NH facility, measured as the number of units, was included at baseline. Facilities also were classified by location in the greater Portland metropolitan areas (metro), in medium-sized urban areas (e.g., Eugene, Springfield, Salem, Medford; urban), and in small town/rural areas (rural).

Need characteristics. The 10-item Kahn-Goldfarb Mental Status Questionnaire (MSQ) was administered at each time to assess cognitive status (Kahn, Goldfarb, Pollack, & Peck, 1960). Responses are coded as 0 for a correct or 1 for an incorrect answer. The MSQ showed good reliability (α = .71). ADL dependencies were measured by asking about the amount of assistance each resident needed with feeding, bathing, toileting, dressing, and transferring (Finch, Kane, & Philip, 1995). Responses range from 0 (no assistance) to 2 (total assistance), and these responses were summed. The scale showed good reliability (α = .74). Self-assessed general health was measured on a 4-point scale with responses ranging from 1 (poor) to 4 (excellent). Psychological well-being was measured with a 6-item subscale of the SF-36 Short-Form Health Survey (Ware & Sherbourne, 1992), asking how often residents have felt downhearted and blue, down in the dumps, calm and peaceful, very nervous, and happy, and whether the future looks promising. Responses ranged from 1 (all of the time) to 6 (none of the time), and these responses were summed. Higher scores represent more positive perceptions of the resident’s self-assessed general health. Psychological well-being measured the 6-item subscale of the SF-36 Short-Form Health Survey (Ware & Sherbourne, 1992), asking how often residents have felt downhearted and blue, down in the dumps, calm and peaceful, very nervous, and happy, and whether the future looks promising. Responses ranged from 1 (all of the time) to 6 (none of the time), and these responses were summed. Higher scores represent more positive perceptions of psychological well-being. The scale showed good reliability (α = .79). A 4-item scale was developed to measure residents’ perceived quality of interactions with AL staff, asking how often staff treated the resident with dignity and respect, listened to the resident’s comments and opinions, encouraged the resident to do things for him or herself, and answered questions. Responses range from 0 (all of the time) to 6 (none of the time). Item responses were summed, with higher scores representing more negative perceptions of staff. This measure showed moderate reliability (α = .61).

Analysis

First, exploratory factor analyses were conducted to determine the factor structure of the informal help measure. These analyses were necessary because the structure of this scale has not been examined previously. To determine the presence of attrition bias, residents who exited the study from T1 to T2 were compared with participants in the 6-month panels on T1 independent variables and informal help. Similarly, those respondents who left the study from T1 to T3 were compared with participants in the 1-year panels on the same T1 variables. If significant differences were found among the longitudinal panels and attrition groups, these indicators were correlated with baseline informal help among those who exited the study. Significant correlates then were included in predictive models of informal help to partially adjust for potential attrition bias.

In subsequent analyses, change in informal help among AL and NH residents was used as the dependent variable. Change scores were calculated by subtracting the baseline informal help score from the 6-month and 1-year scores. Other methods were considered. For example, we explored the possibility of using growth curve modeling (see Bryk & Raudenbush, 1987; Willett & Sayer, 1994) to measure predictors of change in informal help. However, because of little variance in several variables, growth curve analysis was not used.

A long-standing debate over the feasibility of change scores in longitudinal analyses exists. Classic work by Cattell (1966), Cronbach and Furby (1970), and Lord (1963) condemned the change score as inherently unreliable, at least based on pretest-posttest correlations of observed scores at two points. However, as discussed by Rogosa (1996) and others (Willett, 1988), change scores are effective and reliable when determining evidence of intraindividual change (something that cannot be measured by simply correlating a T1 and a T2 score, because high correlation coefficients over time represent stable rank order as opposed to intraindividual or different trajectories of change). Therefore, we decided to use change scores in subsequent analyses (for more discussion, see Burr & Nesselroade, 1990; Maxwell & Howard, 1981; Nesselroade & Cable, 1974).

An additional issue raised by critics of the change score is regression to the mean (Cronbach & Furby, 1970; Lord, 1963), or, individuals with very high or low scores at T1 will be more likely to gravitate toward the mean value at T2 or T3. However, regression to the mean is often a function of when the T1 measurement is administered; in addition, the correlation of observed initial status and observed change is often a poor estimate of the association between true change and true initial status (Rogosa, 1996). For these reasons regression to the mean effects in change scores often are not understood. In models in which we predicted change over 6 months and 1 year, T1 scores of informal help were included as predictive variables to control for baseline status when examining change. Even though observed regression to the mean estimates are fallible, we decided to control for the possibility that such effects occurred in our AL and NH samples.

Statistical comparisons of informal help between AL and NH residents were examined at each point with analyses of covariance (ANCOVAs). Although baseline descriptive information on informal help showed that those in AL received more assistance with transportation and arranging appointments, such data ignore the fact that residents in AL and NH settings are markedly different in terms of functional status and service utilization (see Tables 1 and 2). To better understand how individuals in AL and NH vary in the range of informal help received, baseline differences between the two groups (e.g., ADL dependencies) that could explain these initial variations in informal help were controlled in subsequent ANCOVAs. By creating informal help scores that adjusted for group differences at T1, we could better discern whether setting (AL vs. NH) was related to variations in informal assistance.

The next step of the analysis focused on reducing the data. The decreased sample size over time did not allow regression models to include all of the predictor variables. Bivariate cor-
relations were conducted within each domain of the model. In instances where two or more variables were correlated at the $r > .25/p < .05$ level, one variable was selected for entry in subsequent analyses.

We then conducted multiple regression equations to determine the significant predictors of informal help among AL and NH residents at baseline, and change over 6 months and 1 year. At 6 months and 1 year, baseline variables and change scores representing the various domains of the model were included as independent variables. Change scores were computed for independent variables measured at interval and continuous levels.

The objective of the regression analyses was not to determine whether certain variables were stronger predictors of informal help in one setting versus the other; instead, the regression analyses were conducted for the purpose of exploring relationships within AL and NH settings. No comparisons were made across the NH and AL samples. Ideally, had an adequate sample remained at 1 year, the two samples would have been pooled and interaction terms added to determine whether independent variables in one setting were more potent predictors of informal help over time (e.g., Gender × Setting). The necessary inclusion of main effects and interaction terms was overwhelming for the available sample size. Therefore, we examined separate regression models for the AL and NH samples, limiting our interpretations within each setting.

Results

Factor Analysis of Informal Help

An exploratory factor analysis of the informal help measure resulted in two factors with eigenvalues > 1.00. Factor 1 accounted for 35.01% of the variance, and Factor 2 accounted for 18.64% of the variance. Four items loaded together (i.e., loadings with a minimal value of .40; see Comrey & Lee, 1992) and reflect instrumental aspects of help, such as informal help with arranging appointments, doing shopping or errands, helping with business matters, and providing transportation. The other items assessed more personal types of assistance, including cleaning the apartment unit or room, doing personal laundry, and helping with personal care.

In subsequent analyses, responses on these items were summed to create two informal help scores (instrumental assistance and personal help). At baseline, residents in AL reported an average of 2.68 ($SD = 1.36$, range $= 0–4$) types of instrumental assistance and 0.37 types of personal care ($SD = 0.68$, range $= 0–3$). Residents in the NH reported, on average, 2.04 types of instrumental assistance ($SD = 1.38$, range $= 0–4$) and 0.31 types of personal care ($SD = 0.31$, range $= 0–3$).

Attrition

Assisted living. By 6 months, 115 residents had dropped out of the study. A comparison of T1 variables found that more respondents who remained in the study had a length of stay greater than 6 months, used fewer contract services, reported less ADL dependency, and reported higher cognitive status. To identify possible attrition bias, these indicators were correlated with T1 instrumental assistance and personal help within the attrition sample. Only ADL dependency was associated with personal help at baseline ($r = .19$, $p = .05$). Thus, this variable was included in the analysis to adjust for possible attrition bias when predicting personal help among AL residents.

By 1 year, 198 AL residents had exited, leaving 242 participants at T3. Comparisons found that a greater proportion of residents at 1 year had a T1 length of stay of greater than 6 months, were younger, used fewer contract services, indicated less ADL dependency, reported higher cognitive status, and reported fewer negative perceptions of staff. Bivariate correlations found that T1 ADL dependency was associated with personal help ($r = .21$, $p = .001$), so ADL dependency was included in subsequent models predicting personal help at 1 year for AL.

Nursing home. By 6 months, 56 NH residents had dropped out, leaving 100 participants. Residents in the attrition sample were more likely to have a relative within an hour’s drive of the facility, have more children, use more contract services, reported lower cognitive status, and reside in the NH for less than 6 months. Bivariate correlations with T1 informal help variables found that number of children was associated with instrumental assistance among those who exited ($r = .28$, $p = .04$), so number of children was included in subsequent predictive models.

Eighty-two NH residents dropped out of the sample by 1 year, leaving 74 residents. Participants in the attrition group were more likely to have resided in their facilities for less than 6 months and indicated lower cognitive status. However, neither of these variables was associated with T1 informal help variables; therefore, they were not included in subsequent analyses.

Detailed results of all comparisons regarding attrition may be obtained from the authors.

Comparing Informal Help Among Residents

Results from analyses of variance and $\chi^2$ found that NH and AL residents were statistically different on a number of important variables at T1 (see Tables 1 and 2). Those variables were included as covariates in ANCOVAs that compared instrumental help and personal care throughout the duration of the study. Table 3 presents the results of the ANCOVAs for each panel. A distinct pattern emerges; even after controlling for T1 differences (which largely accounted for expected differences in functioning and disability among the two samples), AL residents received a wider range of instrumental help. The only exception occurred
Correlations Within Domain

To minimize data for the regression models, bivariate correlations were conducted at baseline. Number of children was significantly associated with family’s traveling distance from the AL facility \( (r = .51, p = .001) \). Of these two variables, traveling distance was retained, because it is a likely predictor of informal help in residential facilities (see Gaugler, Leitsch, et al., 2000), and number of children was included to adjust for attrition in the T2 NH panel. Number of units was correlated with whether the facility was designated as rural, urban, or metro area \( (r = -.37, r = .41, \) and \( r = .52, \) respectively) and was retained.

Predictors of Informal Help

We present the individual predictors of informal help for AL and NH residents in Figures 2 through 4. Figure 2 presents the results of informal help at T1 for AL and NH residents, Figure 3 presents the 6-month models, and Figure 4 presents the 1-year models. Only the significant paths are shown.

LISREL VIII was used to estimate the multivariate regressions (Jöreskog & Sörbom, 1993). Advantages of LISREL include its ability to provide multiple indices of goodness of fit,
Figure 3. Multivariate Regression Model for Change in Informal Help at 6 Months

Note: For assisted living (AL), \( \chi^2(117, 325) = 235.97 \), RMSEA (root mean square of approximation) = .02, GFI (goodness of fit) = .95, NNFI (nonnormative fit) = .97, CFI (comparative fit) = .98, \( p < .19 \). For nursing home (NH), \( \chi^2(89, 100) = 251.68 \), RMSEA (root mean square of approximation) = .01, GFI (goodness of fit) = .92, NNFI (nonnormative fit) = .93, CFI (comparative fit) = .93, \( p < .05 \).

For entire model, *\( p < .05 \). **\( p < .01 \).

to model multiple dependent variables, and to estimate the relevant empirical associations in a multivariate regression (e.g., correlations among independent variables, correlations among dependent variables, and path regressions between independent and dependent variables). All models provided a moderate to excellent fit. An excellent fit is demonstrated in models in which \( \chi^2 p > .05 \), root mean square of approximation < .05, goodness-of-fit index > .92, nonnormative fit index > .95, and comparative fit index > .95 (Schumacker & Lomax, 1996).

With the exception of T1 personal help, the three models predicted moderate amounts of variance in informal help in both the AL and NH samples, suggesting that the expanded Behavioral Model is useful when analyzing informal care provision in multiple long-term residential settings. In addition, a number of components predicted instrumental and personal assistance in AL facilities. For example, one predisposing characteristic (gender) was a significant predictor of informal help in AL, with women receiving more instrumental assistance throughout the study. In addition, education and outside service use were associated with informal help among AL residents. Those who reported lower education received increased instrumental assistance, and service use was associated with increased personal assistance.
help over the study period. Also, as expected, AL residents with a family member in close proximity were more likely to receive both instrumental and personal help. A number of need characteristics (age, cognitive status, subjective health status, and ADL dependency) were associated with increased informal help; for the most part, AL residents who were older and more frail received a wider range of assistance from family members and friends. Also, positive perceptions of staff and lower psychological well-being were related to decreases in instrumental assistance and personal help over 1 year.

Similarly, several components of the expanded Behavioral Model were significant predictors of informal help in the NH sample. Women received more instrumental assistance at T1 and increased personal help over 6 months. Enabling characteristics (proximity and number of children) were predictive of increased personal help at both T1 and 6 months. Those with more edu-
Informal Help in AL Settings

Findings show that AL residents received more types of instrumental assistance from families and friends than did NH residents, and this remained constant over time. In contrast to the NHs in this study, where a comprehensive package of services was offered, formal ADL and IADL care in Oregon-style AL settings is based on consumer and family preferences and provider policies as much as on a systematic assessment of need. Residents do not have to accept a comprehensive service package, and financial incentives dictated against doing so. In apartment-style AL settings in this study, residents had more opportunity to continue with IADL activities, such as shopping, transportation, and arrangement of appointments, and consequently they needed informal help with these tasks. For these reasons, family members and friends could maintain greater levels of involvement in AL than in the NHs in this study.

As mentioned earlier, the limitations in sample size precluded empirical comparisons of predictors across settings; therefore, we explored the patterns of relationships within AL and NH environments. Predictors of informal help have not been studied in AL settings, and the paucity of research in this area offered the opportunity to refine an existing conceptual model and to provide new empirical information on the AL experience.

Predictors of Informal Help in AL Settings

One predisposing factor, gender, predicted instrumental and personal help in the AL setting, such that women received a greater range of informal help throughout the study period. Although women are more likely to be widowed in old age, they also tend to report stronger social ties with family members and friends (Antonucci, 1994). It may be that these ties positively affected the informal help supplied for these AL residents.

Enabling characteristics also influenced informal help in this setting. Residents with higher levels of education reported decreased informal help over time. It may be that more educated residents are able to utilize a number of other resources that provide more choice of facilities that offer a variety of services, thus alleviating the need for greater instrumental support from family members or friends.

Those who had family members at close distance were more likely to receive a wide range of assistance. Proximity of family members or friends is associated with visits (Gaugler, Leitsch, et al., 2000). It is possible that such proximity reflects the continuation of family caregiving provided previously in the community, and that these facilities encouraged or facilitated family members’ involvement. More prospective information is needed to determine how transitions from the community to this setting occur for older adults, and how informal and family care networks are affected by such a move (Gaugler et al., in press).

Formal service utilization also affected informal help. Use of outside services was predictive of increased personal care over time. It is possible that residents’ health and functional care demands increased, thus making necessary the purchase of outside services (e.g., home health) to supplement informal personal care. Clearly, the findings involving formal service use and informal help in this setting suggest a more complex process; whether residents purchase services outside the facility could affect the informal-formal support interface (Lyons & Zarit, 1999).

It is interesting to note that no facility-level enabling characteristic influenced informal help in the AL setting. The lack of findings points to the need to more fully measure the environmental status of AL facilities when assessing informal care provision or well-being. Environmental characteristics and residents’ perceptions of them can affect the subjective and functional experiences of AL residents (e.g., Marsden, 1999) and must be accounted for in a more explicit manner than is possible here.

Need factors of residents also affected the provision of informal help, although these relationships were more complex than anticipated. Overall, residents who were older and frail received a greater range of instrumental and personal assistance. Similar to social support models (Aneshensel et al., 1995; Ensel & Lin, 1991), family and friends mobilized and offered a wider range of help when elderly residents were disabled and required greater assistance.

The finding that residents’ positive perceptions of staff were associated with more types of informal help over time contradicts other findings in the literature (e.g., Gaugler, Leitsch, et al., 2000). Anecdotally, it is widely believed that rigid rules on the part of staff keep families from assuming the full care roles they might prefer in some long-term care facilities; it is hoped (and is implied by the AL facilities in this study) that such a distancing phenomenon can be avoided. Psychological distress also was related to increased informal help among these residents. Some studies of caregiving relationships across the lifespan show that depression plays a role in driving family members away (e.g., Teti, Gelfand, Messinger, & Isabella, 1995), but the positive social atmosphere present in many of the settings (replete with social activities, family-style meals, and other family-oriented events) may permit family members and friends to cooperate with staff in supporting depressed elderly relatives.

Predictors of Informal Help in NH Settings

The pattern of empirical relationships between predictor variables and informal help in the NH setting also was compelling. Women received more instrumental assistance and personal care. Research suggests that those who are unmarried or living alone are likely to be institutionalized (see Gaugler, Edwards, et al., 2000), and for men, the spouse is often the primary source of informal care in old age, whereas women rely on a wider range of social contacts (Aneshensel et al., 1995). Thus, institutionalized men in this study received less informal help.

Several variables also appeared to enable informal help use over time. Residents with higher levels of education received more types of instrumental assistance. NH residents of varying socioeconomic strata have access to intensive services via Medicaid (although the quality and aesthetics of private-pay and Medicaid-pay NH settings can vary). For residents with higher expenditures.
socioeconomic status, private-pay settings may offer more flexible opportunities for family members (e.g., special family activities and services). Residents with family members in close proximity also were more likely to receive a wide range of informal assistance, and prior research shows that proximity is associated with NH visits (Bitzan & Kruzich, 1990).

Earlier use of contract services also enabled greater instrumental help 6 months later. Long-term care residents may use informal help as a supplement to, rather than a substitute for, formal services provided in this setting. As in the community, families and other informal supports can complement the formal hands-on personal care that older adults receive (Lyons, Zarit, & Townsend, 2000; Noelker & Bass, 1989). Even in instances when residents used intensive health care services, families appeared to remain strongly involved in providing care and assistance (Bowers, 1988; Duncan & Morgan, 1994).

The only facility enabling characteristic that predicted informal help was the negative relationship between number of units in NHs and change in instrumental help 6 months later. Smaller facilities may facilitate involvement by encouraging family members to fill in service gaps and provide instrumental help, such as transportation or arrangement of appointments (e.g., for discussion on family involvement in NHs, see Friedemann et al., 1997; Maas et al., 2000). In this manner, a full range of service provision can be achieved.

Need characteristics also affected informal help provision in NHs. Residents who suffered from functional and cognitive impairments and perceived a more negative relationship with staff were more likely to receive informal help over time. As residents’ needs became more pronounced, family members may have continued their commitment to preserve the identity of the elderly relative and thus may have remained involved in residents’ lives after institutionalization (Bowers, 1988). Psychological distress was related to decreased informal help in this setting (see also Gaugler, Leitsch, et al., 2000). It is possible that facility-level barriers (e.g., limited visiting hours as a result of rigid, medicalized scheduling, etc.) may make it difficult for family members to engage in the activities necessary to support their relatives. Conversely, some family members and friends may have disliked the medicalized atmosphere and avoided visiting, resulting in increased depression among residents.

**Limitations**

This study has the limitations of a secondary analysis using data not primarily constructed to analyze informal help. For example, the measure of informal help did not include intensity of effort. Furthermore, source of specific help should be incorporated in future research, because the caregiver’s relationship with the care recipient plays an important role in the provision of informal assistance (Matthews, 1987; Matthews & Heidorn, 1998). To fully understand informal care and its motivators, we also would need information from caregivers. This study relied solely on data from care recipients.

Another limitation is that the sample may not represent apartment-style AL nationally. Activities in AL are highly sensitive to state law that may permit, prohibit, or require that various kinds of care be performed by staff, promulgating admission and retention criteria that would limit or add to the opportunities for informal assistance. For this reason, more study is needed with samples in multiple states. The sample included here was largely homogeneous with regards to race, as most residents were White. Also, the sample is a mixed-age cohort and includes only those residents who were cognitively intact enough to complete interviews. Studies are needed to examine predictors of informal help for less able people.

**Practice, Policy, and Conceptual Significance**

There are several important practice, conceptual, and policy implications apparent in this study. First, the trends in the data suggest that the apartment-style AL model may facilitate the involvement of family members and friends when compared to more intensive care environments. Also, the findings may reflect the different service practices of the two settings. For example, obstacles to informal support in NHs could include conflicting perceptions of the appropriate responsibilities of family and staff; when staff supply the bulk of personal care to residents, families could feel responsible for other types of assistance but could have difficulty arranging collaborative relationships with NH staff (Maas et al., 2000; Rubin & Shuttlesworth, 1983; Schwarz & Vogel, 1990). The noninstitutional, more homelike settings provided by many AL facilities may reduce family-staff conflicts, and the increased privacy can allow family members and friends to remain more involved in providing instrumental help. Most AL residents had their own apartment units, which could facilitate visits from family members and friends. Importantly, continued family involvement is related to improved quality of life for older adults in residential care facilities (Greene & Monahan, 1982; Mitchell & Kemp, 2000; Noelker & Harel, 1978).

This study offers a conceptual contribution. Most studies attempt to ascertain how families and their disabled older adults rely on informal and formal support in the community (Lieberman & Fisher, 1998; Lyons et al., 2000). By using an expanded version of the Behavioral Model, we demonstrate the usefulness of this framework for predicting informal help provision over time and in contexts beyond the community. Recent research (Lyons & Zarit, 1999) suggests that the interface between formal and informal providers of care is dynamic, fluctuating according to the source and type of care supplied to older adults in the community. By adopting an expanded form of the Behavioral Model to predict informal help in residential long-term care, where a range of formal services is already provided, we found that informal and formal sources of care operate in tandem, and factors influencing both must be considered when assessing resident outcomes.

Finally, as the findings of this study imply, a setting that de-emphasizes the institutional aspects of long-term care in favor of greater privacy, independence, and personal choice may facilitate the social integration of residents within their families and social networks. However, the policies affecting AL are rapidly changing, and ALs vary from state to state and from owner to owner. Therefore, we argue that continued study of informal help in AL with improved measures has crucial policy and practice significance. Identifying practices and procedures that consistently encourage positive involvement of family members and friends will be integral to creating more pleasing, attractive, and ultimately beneficial residential environments. Further emphasis on homelike aspects, resident autonomy, family involvement in care plans and decision making, and effective collaboration between families and staff may facilitate types of informal involvement that benefit the elderly resident (e.g., see Friedemann et al., 1997; Montgomery, 1982). Identifying client and facility-level factors that predict informal support in AL is necessary. Future research can identify—and practitioners and policy makers can determine and implement—facility procedures that offer
older adults the option to maintain close, supportive relationships with family and friends in these settings.

References


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