

# How Much Is Enough? Perspectives of Care Recipients and Professionals on the Sufficiency of In-Home Care

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**Purpose of the Study:** This study sought to increase knowledge about the impact of rater role on the assessment of in-home supportive care. The authors compared the perspectives of care recipients and professionals on one aspect of the broad concept of quality of care in home care—the sufficiency of the amount of care provided by informal and formal caregivers. **Design and Method:** Sufficiency of home care was assessed through concurrent elderly persons' self-report through telephone interview and nurse clinical report based on in-home interviews with the elder. Care was assessed in terms of the sufficiency of the amount of informal and formal assistance received to meet functional dependency needs. Statistical analyses compared the ratings of elder and professional. **Results:** Professional ratings of the sufficiency of care were significantly lower than those of the elderly care recipients. From the perspective of both care recipients and professionals, sufficiency of care was significantly related to coresidence of elder and caregiver, and to caregiver health. **Implications:** Consistent with previous literature, rater role was found to influence the assessment of the sufficiency of in-home care. Researchers and providers should recognize that care recipient and professional ratings are not interchangeable.

**Key Words:** *Quality of home care, Rater role, Measurement of quality of care*

As the home-care industry has grown, so too have concerns about the quality of in-home care (Applebaum, Mollica, & Tilley, 1997–1998). In response, the health and human service sectors have stepped up efforts to assess and improve quality of care (Apple-

baum, 1995). Although family and friends provide considerably more care than formal providers (Kosberg & Cairl, 1992; Morrow-Howell, Proctor, Dore, & Kaplan, 1998; Strawbridge & Wallhagen, 1992), relatively little attention has focused on assessing and improving the quality of in-home care provided by the informal sector.

As with the assessment of quality of care in general, research on the quality of home care is challenged by definitional issues (Capitman, Abrahams, & Ritter, 1997). Reflecting the complexity of the concept “quality of care,” different criteria are used to define and measure quality (McGlynn, 1997). Accordingly, there is lack of consensus as to what constitutes quality home care. Further challenges surround the issue of who should rate quality. Which home care consumer should be considered in assessing quality (Applebaum et al., 1997–1998), and which stakeholders should rate quality?

This study seeks to increase knowledge about the variance in the assessment of quality of home care related to rater role. There are many roles assumed by people related to the home care industry—care recipient, informal caregiver, professional caregivers, clinical case managers, financial case managers, etc. We seek to understand if people systematically view and thus rate home care quality differently, depending on their role. Specifically, we focus on two raters: care recipients and professionals. Among the many potential domains of quality of care, we focus on one: the sufficiency of the amount of care provided by informal and formal caregivers to meet the dependency needs of frail elders in activities of daily living (ADL).

## Related Literature

**Conceptions and Indicators of Quality.**—Various attributes are used to conceptualize and evaluate the quality of care. With respect to health care in general, Donabedian (1992) identified six attributes of quality: effectiveness, efficiency, cost-effectiveness, acceptability, legitimacy, and equity. The aspect of health care addressed in this study, home care, has been typically evaluated in terms of prevented nursing home placements, costs, and such elder outcomes

This work was funded by the Agency for Health Care Policy and Research Grant R01 HS-6406-01 as well as a Faculty Award from the George Warren Brown School of Social Work, Washington University in St. Louis, Missouri.

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as functional status and mortality. Attention to more proximal indicators of quality, particularly features of the in-home care per se, is more recent. For example, Ory and Duncker (1992) called for reconceptualizing outcomes to include the adequacy of care. Morrow-Howell, Proctor, and Berg-Weger (1993) addressed the adequacy of informal care for elderly patients discharged home from the hospital, documenting concerns that discharge planners expressed about informal caregivers' abilities to perform the tasks expected of them in posthospital care.

Health care has also been evaluated in terms of the extent to which services meet needs for assistance, an aspect of quality that may be particularly germane to care recipients. McGlynn (1997) noted that patients tend to evaluate care in terms of its responsiveness to their individual needs. Morrow-Howell, Proctor, and Dore (1998) conceptualized adequacy in terms of the extent to which services meet needs for assistance. Consistent with this approach, Skinner, Steinwachs, Handley, and colleagues (1999) postulated that outcomes of care (for persons with severe and persistent mental illness) would be better when services meet needs for assistance. Particularly in postacute care, meeting needs for functional assistance is an important component of quality. Over the past 2 decades there have been trends for patients leaving the hospital after shorter stays at higher levels of dependency and with increased need for care (Coe et al., 1986; Kosekoff et al., 1990). Mamon, Steinwachs, Fahey, and colleagues (1992) found that 97% of patients discharged home after hospitalization had need for care at 2 weeks postdischarge.

**Stakeholder Perspectives on Quality.**—As McGlynn (1997) has noted, “quality is in the eye of the beholder; that is, expectations and the value associated with different aspects of care are likely to vary among different stakeholders” (p. 9). In assessing the quality of home care, the relevant perspectives include those of the elder-care recipient, any one of a number of family members (some providing care and some not), and the formal care providers (the home care aides themselves, their supervisors, or the care managers; Wagner, 1988). Additionally, funders and regulators are key stakeholders. Each of the various constituencies or stakeholders in the home-care industry has a legitimate and perhaps unique perspective; their motivations, values, and criteria may be truly different (Kaufert, 1983). Each perspective may be differentially important in planning or evaluating programs and services. For example, discrepancy between the need for a service (as assessed by providers) and the demand for that service (as expressed by consumers) is critical in program planning; that is, there is a risk that services will be structured by providers for hypothetical target populations (Wilson & Netting, 1987). Patient perspective, particularly patient satisfaction, has been regarded as an “indispensable” reflection of the quality of care (Donabedian, 1988, p. 1746); and Skinner, Steinwachs, Handley, and colleagues (1999) noted that by “lis-

tening to the consumer and designing systems of care that are more responsive to meeting needs defined by the consumer, more effective—and accountable—delivery systems are likely” (p. 117). Yet particularly in gerontology, in which elderly subjects may be too sick or cognitively impaired to participate in interviews, researchers may depend on proxy informants. Thus, differences introduced by rater role may threaten the validity or interpretation of quality of care measurement (Tennstedt, Skinner, Sullivan, & McKinlay, 1992).

**Related Work on Rater Perspectives.**—Incongruence between professional and lay perspectives of service needs and preferences is well-documented (Avant & Dressel, 1980; Keith, 1975; Riesenfeld, Newcomer, Berlant, & Dempsey, 1972; Wilson & Netting, 1987). For example, Wilson and Netting (1987) found that elders identified fewer problems and needs than health professionals did, whereas professionals perceived that the elderly adults had more access to services (transportation, specifically) than did the elderly adults themselves. Epstein, Hall, Tognetti, and colleagues (1989) reported low correlations between patient and proxy ratings of satisfaction with health care. Factors associated with satisfaction with hospital discharge plans are different for patient and family raters (Proctor, Morrow-Howell, Albaz, & Weir, 1992). Patient ratings were associated with involvement in the decision-making process, social support, and physical condition; family ratings were associated with length of hospital stay, discharge planning processes, and discharge destination. Efforts to improve satisfaction ratings may be different depending on which consumer group is being considered.

The study of systematic differences between various raters of health status has a somewhat longer history. Moderate to weak associations have been documented between self-rated health and physician-rated health, with older adults generally rating their health more positively than physicians do (Friedsam & Martin, 1963; Kivinen, Halonen, Eronen, & Nissinen, 1998; Rothman, Hedrick, Bulcroft, Hickam, & Rubenstein, 1991; Streib, Suchman, & Phillips, 1958; Maddox, 1964). Additionally, self-rated health has been found to be a better predictor of future health-related outcomes (Maddox & Douglas, 1973) and health service use (Markides, 1979).

Similarly, systematic differences are observed in various raters' assessments of elders' functional ability (Rubenstein, Schairer, Wieland, & Kane, 1984; Dodge, Janz, & Clark, 1994). As with health status, older adults tend to report higher levels of functioning, with family members reporting the lowest levels, and professionals (nurses) assigning intermediate ratings (Rubenstein et al., 1984). Further, the closer the relationship and the more frequent the contact, the lower the family members' perception of the elder's functional and health status is (Rubenstein et al., 1984; Rothman et al., 1991).

Several researchers have tested explanations for differences between ratings of health and function.

Kivinen and colleagues (1998) postulated that it is the differential perception of the effect of age that explains the difference in rating of health status between patients and physicians. After controlling for medical condition, they found that age of the patient did not relate to self-rated health whereas it did relate to assessments by physician, with older patients assessed as being in poorer health. Other researchers have suggested that characteristics of the elders as well as the family proxies affect ratings of the elder's health and functional status (Kiyak, Teri, & Borson, 1994; Magaziner, Simonsick, Kashner, et al., 1988; Rothman, Hedrick, Bulcroft, Hickam, & Rubenstein, 1991; Poulshock & Deimling, 1984; Hooyman, Gonyea, & Montgomery, 1985). Better agreement between patient and family raters has been associated with better mental health and cognitive ability of the patients (Magaziner et al., 1988; Kiyak, Teri, & Borson, 1994). Family proxies experiencing greater burden or psychological distress report greater impairment in health and functional ability of the care recipient. This suggests that family members perceive higher disability to correspond with burden they feel or to justify nursing home placement or formal service use they may feel they need (Rothman et al., 1991). Finally, it has been suggested that the disabled elder may seek to conceal disability so as not to burden caregivers, deny disability as a coping mechanisms, or use a different time frame in the evaluation of their ability (Rubenstein et al., 1984).

### *Study Focus and Conceptualization*

This study addressed the issue of stakeholder perspectives on the quality of in-home supportive care. Quality is conceptualized and measured in terms of the sufficiency of the amount of care received to meet specific functional dependency needs. Who says how much is enough help with activities of daily living—the care recipient, the informal or formal care provider, the professional care manager, or the public payer? In this study, we focused on the care-recipient perspective versus the professional perspective of a nurse researcher. Both formal and informal care are considered when assessing sufficiency of care, which is very important in the context of community care (Capitman et al., 1997).

This study addressed four research questions:

1. Do care recipients and professionals vary in their assessment of physical functioning ability, and if so, what specific functional areas (ADL and instrumental activities of daily living [IADL] areas) contribute to the variation?
2. Do care recipients and professionals vary in their assessment of the sufficiency of care? That is, do care recipients and professionals have different perspectives on whether enough help is provided?
3. What specific functional need areas (ADL and IADL areas) contribute to the variation in raters' assessment of sufficiency of care?
4. What factors are associated with sufficiency of care from these two different perspectives?

Although previous literature consistently demonstrates that older adults rate their functional ability higher than either family members or health care professionals do, we sought to replicate this finding in a sample of chronically ill elders recently discharged home from the hospital. The last three questions have the potential to add new knowledge regarding rater role.

## **Methods**

### *Parent Study*

The data for this study were derived from a larger, prospective study of postacute care for older adults with chronic heart disease. To accomplish the aims of the parent study, the researchers recruited 253 older adults between June, 1990, and October, 1991, while the participants were hospitalized at a large Midwestern urban teaching hospital. Subjects met the following criteria: they were 65 years of age or older, were diagnosed with congestive heart failure (CHF), were served by a discharge planner, and were discharged to a home setting. CHF is a particularly appropriate diagnosis for studying postacute home care, given its prevalence among elderly persons, high public health costs, and the importance of supportive home care to maintain gains achieved during hospitalization (Bonneux, Baredregt, Meeter, Bonsel, & van der Mass, 1994). Given the aims of the parent study, we selected patients served by discharge planners to ensure a sample with need for home care and one that received a mix of informal and formal services.

Discharge planners identified patients who met study criteria, whom research assistants approached to explain the study; 82% of patients contacted consented to participate. We approached a family member at the instruction of the discharge planner when patients were too ill or cognitively impaired to participate. In 35% of the cases, this family collateral provided consent and completed data collection for purposes of the larger study.

### *Data Collection*

At the time of hospital discharge, a research assistant abstracted the medical records. At 2 weeks post-discharge, a research assistant completed a telephone survey with the study participant or the collateral. Within 48 hours of this telephone interview, a registered nurse (RN) research assistant completed an in-home interview. Both the telephone and in-home interview focused on functional ability and informal and formal assistance received to meet the patient's ADL and IADL needs. We recognize that two data collection methods are used (telephone and in-home interviews) and that this may confound our findings in that differences attributed to rater role may result from differing data collection methods. Yet the advantages of this approach outweigh this risk, as we describe below.

During the telephone interview, the research assistant relied on the study participant's self-report. We



viewed the telephone interview as the preferred approach to data collection in self-report data because, compared with an in-person interview, it minimizes cues and the influence of the interviewer. In contrast, we viewed the in-person interview as conducive to obtaining a professional clinical assessment. During the in-home interview, the nurse research assistant had access to a broader range of information she could draw from the study participant, the family members present at the interview, and clinical observations to make a professional assessment of functional ability and sufficiency of care provided. Thus, we obtained concurrent assessment of physical functioning ability and the sufficiency of care through the telephone interview (self-report from the study participant) and the in-home interview (clinical report of nurse research assistant).

### Sample Subset

Addressing the research questions posed in this article required that (a) the care recipient be capable of providing self-report and (b) each subject provide both a telephone interview and concurrent in-home interview. Although the requisite sample for these analyses is select and, in our case, small ( $n = 85$ ), such a sample is necessary to answer questions about rater perspectives that are important both substantively and methodologically. Despite limits to statistical power, the subsetted sample provides a scarce opportunity to examine issues in quality of care measurement that are critical in both gerontology and health services research.

Accordingly, we subset the sample from the larger study as follows. Of the 253 eligible patients at the time of discharge, 209 were available to participate in a telephone survey 2 weeks post discharge. In this 2-week period, 39 patients died, were readmitted to the hospital, or entered a nursing home before information could be gathered; this number reflects the unstable condition of CHF and the high readmission and mortality rate associated with this condition (Bonneux et al., 1994). Five patients refused to participate in the 2-week interview. Of the 209 study participants completing the 2-week postdischarge telephone interview, in-home interviews were completed on 149. In-home interviews were not completed for two reasons: (a) the participant lived more than 2 hours from the study site and in-home interviews were not requested because of the excessive travel time and (b) the participant consented to the telephone interview but not to the in-home assessment. Thus, 149 observations had concurrent telephone and in-home interviews at the 2-week postdischarge observation point. Finally, to compare care recipients with professionals, we include only those 85 observations for which the older adult completed the telephone interview rather than a family proxy.

Bivariate analyses were completed to compare the 85 elders in this study sample with the 124 elders who were available for the 2-week follow-up interview but were not included in this particular analysis

(as mentioned above, 209 study participants completed the first follow-up interview). There are no gender, race, or socioeconomic status (SES) differences between the two groups; however, the 85 elders in this study were more functional ( $t = 9.39$ ,  $p < .01$ ) and younger ( $t = -3.79$ ,  $p < .01$ ) than elders who did not participate. This difference results from the elimination of study participants whose family proxies provided the information because the elder was not able, most often by virtue of illness or dependency. This sample bias limits generalizability, which is discussed below.

As noted above, achieving a valid subsample to address differences in rater perspective is associated with limits to both analytic power and generalizability. In the functional area-by-area analysis reported below, four cell sizes were too small for valid tests of statistical difference (transfer, toileting, walking, and eating). Thus we eliminated these areas from the comparison of self-report and professional assessment. In regard to generalizability, those care recipients too ill or too cognitively impaired to participate in the telephone interview are different from those who can participate, and indeed the amount of care they receive and their perceptions of the sufficiency of this care could be different. Thus we can generalize only to care recipients who can participate in telephone interviews regarding their conditions and their care arrangements. This generalizability issue would plague any such study no matter how big the sample size because one can never measure and compare self-report perspective from study participants incapable of self-report.

### Dependent Variables

The two dependent variables in this study, physical functioning ability and sufficiency of care, were obtained from both the care-recipient and the professional perspectives. For the care-recipient perspective, research assistants (Masters in social work students) conducted telephone interviews with each care recipient, capturing the dependent variables through self-report. To obtain a professional perspective, we trained geriatric nurse practitioners to conduct the in-home assessments using all relevant information available in the interview as well as observation to inform their ratings of functional ability and sufficiency of care. To increase reliability, we used only two nurses for the study. Both nurses had RN degrees and were active and experienced geriatric practitioners.

Physical functioning ability was assessed using the OARS (Older Americans Resources and Services Multidimensional Functional Assessment Questionnaire) instrument (Duke University Center for Study of Aging and Human Development, 1978), which has seven ADLs (transfer, walking, toileting, bathing, grooming, dressing, and eating), and six IADLs (meal preparation, shopping, money management, travel, housekeeping, and medicine administration). In each area, functional ability is captured with a

three-level response: able to perform activity with no help (2), able to perform with some help (1), or completely unable to perform (0). The summative measure ranges from 0 to 26, with higher scores reflecting greater functional ability. Telephone interviews captured the care recipients' self-report of functional ability, whereas the nurses assessed functional ability through clinical interviewing during the in-home interview.

Sufficiency of care reflects the extent to which the informal and formal assistance is seen as enough to meet subjects' ADL and IADL needs. The measurement tool used to capture the sufficiency of care was developed by the authors for studying posthospital care; reliability was established through tests on 20 subjects (Morrow-Howell, Proctor, and Dore, 1998). Test-retest reliability, established on subject telephone self-report on two consecutive days, was .87, using a weighted kappa. Interrater reliability of the instrument across two professionals, who conducted simultaneous in-home assessments, was .81, again using a weighted kappa (Morrow-Howell, Proctor, & Dore, 1998).

Procedures for scoring sufficiency of care were as follows. In areas of the OARS instrument in which function in an ADL or IADL area was rated as independent, we asked no further questions about that specific function. In ADL or IADL areas with any dependency, further information was captured about who provided assistance with the task, how often assistance was received from formal and informal sources, and how sufficient this help was. "Sufficiency of care" was rated, specific to each area of functional need, using a 4-point scale on which 1 = without help at most times; 2 = usually does not have enough help; 3 = usually has enough, but on occasion help is not available when needed; and 4 = always has enough help. As with the functional-ability ratings, care-recipient ratings of sufficiency were self-reports obtained during the telephone interviews; professional ratings of sufficiency of care were nurse assessments from the in-home interviews.

To compare care recipient and professional ratings, we calculated two summative scores, averaging the rated sufficiency of care across areas of functional dependence—one score reflecting the care recipient's overall sufficiency of care and one reflecting the professional (nurse) assessment of the overall sufficiency of care. The quantity ratings (1–4) in each area of need were summed and divided by the number of identified dependency areas, producing an average sufficiency rating. These scores were therefore able to control for difference in care-recipient and professional perspective in functional ability, as follows. If a care recipient reported functional dependency in three areas (transportation, meal preparation, and housekeeping, for example), the three sufficiency ratings in each need area were summed and divided by three. If, however, the nurse assessed more areas of dependency (for example, four areas, including transportation, meal preparation, housekeeping, and medicine administration), her score

would be an average of four sufficiency ratings. Each summative sufficiency rating—one for care recipient and one for professional—ranged from 1 (never enough help) to 4 (always enough help). Scores were thus comparable across rater, regardless of differences between the raters in assessing the patient's functional ability.

### *Independent Variables*

A variety of independent variables were measured for purposes of exploring their contribution to the dependent variable sufficiency of care from care recipient and professional perspectives. Demographic characteristics were extracted from the medical record and included age in years, gender, and race recorded dichotomously as White and African American. Marital status was recorded as currently married and not currently married. Socioeconomic status was assessed from patient response to questions for the Hollingshead Index of Social Class; this measure uses education and occupation to assign subjects a rating of 11 to 77, with lower numbers representing higher social status (Hollingshead, 1957).

The care recipient's health characteristics were ascertained by the nurse during the in-home assessment. Cognitive ability was assessed using the Short Blessed Mental Status exam, which yields a score of 0 to 28, with higher scores indicating more cognitive impairment (Blessed et al., 1968). The Chronic Conditions Checklist from the OARS instrument (Fillenbaum, 1988) captured the existence of 32 chronic medical conditions, weighted by the extent to which the condition interferes with activity (from 0 [no limitation] to 3 [severe limitation]).

The informal care situation was captured through four variables obtained as part of the in-home interview. The identity of primary caregiver was recorded as spouse, adult child, or other. If other caregivers assisted in any way, a dichotomous variable captured the involvement of secondary caregiver. Co-residence of the caregiver and care recipient was also recorded dichotomously. The study participant provided information about the health of primary caregiver, using a 4-point rating scale of excellent to poor. During the in-home interview, the nurse also queried about the level of formal care. Formal care was measured through the number of hours of in-home care provided by agency staff, volunteers, or any paid helper during the previous month.

### *Statistical Analysis*

The univariate distributions of the independent and dependent variables were examined and descriptive statistics are presented in Table 1. The extreme skew on the number of hours of formal assistance per month warranted attention. This variable was log transformed, resulting in a more symmetric distribution, and the logged variable was used in regression analysis. Dependent *t* tests were used to compare care recipient and professional ratings on

Table 1. Description of Sample ( $n = 85$ )

Items Measured	Percentage	Mean (SD)	Range	Skew
<b>Independent Variables</b>				
Age		76.9 years (6.5)	65–94	0.18
Gender	66% female			
Race	61% African American			
Marital status	71% not married			
Socioeconomic status		56.4 (18.0)	11–77	–0.70
Cognitive status		6.8 (5.1)	0–19	0.49
Interference from chronic conditions		9.8 (4.5)	2–27	0.72
Identity of caregiver	Spouse 17% Child 43% Other 40%			
Presence of 2ndary Co-residence	72% had other helper 52% co reside			
Health of caregiver	Poor 6% Fair 26% Good 52% Excellent 16%			
Hours of formal help		48.6 hrs (144)	0–906	4.9
Logged hours of formal help		1.76 (1.0)	0–4.2	0.35
<b>Dependent Variables</b>				
Functioning (care recipient)		19.32 (4.2)	4–25	–0.81
Functioning (professional)		17.51 (4.1)	8–24	–0.21
Sufficiency (care recipient)		3.21 (0.84)	1–4	–0.93
Sufficiency (professional)		2.73 (0.76)	1–4	–0.48

functional ability and sufficiency of care. Similarly, we used dependent  $t$  tests to compare the functional ability ratings and the sufficiency of care ratings on each ADL and IADL area to determine the sources of variation in the summative scores. Thus, functional ratings as well as sufficiency ratings were compared between care recipients and professionals in bathing, grooming, toileting, and so forth. In cases in which sufficiency ratings were compared within each ADL and IADL area, we compared care recipients to professionals only when both raters assessed a functional dependency in the area and therefore provided a sufficiency of care rating in that area (i.e., sufficiency ratings in the area of bathing could only be compared if both care recipient and professional reported a dependency in that area and therefore provided a sufficiency of care rating in bathing). Although this strategy results in the loss of sample size within each cell, it enables the comparison of sufficiency ratings that are freed from the rater bias that is known to exist in the assessment of functional ability.

We used analysis of variance techniques through the SAS general linear model procedure to test the relationship of the independent variables to the sufficiency of care measures (Cody & Smith, 1997). Main effect and repeated measure models were both used. We used repeated measures analysis of variance to test the interactions of the independent variables and rater identity on sufficiency of care. Given the number of interactions to be tested, we tested each interaction separately, after controlling for all independent variables and rater role. The caregiver identity

variable was dummy coded. Because of the substantial correlation between spousal caregiver and marital status in this sample ( $r = .71$ ) as well as the lack of a statistically significant association with the sufficiency of care ratings, we eliminated caregiver identity from the regressions to reduce the number of independent variables being tested. The only model with a significant interaction term is presented.

## Results

*Do Care Recipients and Professionals Vary in Their Assessment of Physical Functioning Ability? If so, What Specific Functional Areas Are the Sources of the Variation?*—As would be predicted from previous work, the older adults receiving in-home supportive care rated their functional ability higher than nurse researcher assistants did,  $t(84) = -5.57$ ,  $p = .0001$ . As seen in Table 1, care recipients rated their functional status approximately 2 points higher on the 26-point scale of physical functioning (19.32 vs. 17.51). Ratings from each of the ADL and IADL areas are compared in Table 2. For each functional area, in which scores range from 0 to 2, the mean care recipient rating was compared with the mean professional rating. As can be seen, care recipients rated their functioning higher in all but three ADL and IADL areas. Nurses rated the older adults as more functional in the activity of bathing than did the care recipients themselves. In two areas—meal preparation and housekeeping—professional and care-recipient ratings of functional ability were not significantly different.

**Table 2. Physical Functioning Ability: Differences Between Care Recipient and Professional Ratings by Functional Area ( $n = 85$ )**

Functional area	Significant difference between raters?	Higher score
Medications	Yes ( $p = .00$ )	Care recipient
Transfer	Yes ( $p = .00$ )	Care recipient
Toileting	Yes ( $p = .00$ )	Care recipient
Walking	Yes ( $p = .00$ )	Care recipient
Bathing	Yes ( $p = .01$ )	Nurse
Grooming	Yes ( $p = .00$ )	Care recipient
Dressing	Yes ( $p = .00$ )	Care recipient
Eating	Yes ( $p = .00$ )	Care recipient
Meal preparation	No ( $p = .29$ )	Not applicable
Shopping	Yes ( $p = .00$ )	Care recipient
Money management	Yes ( $p = .00$ )	Care recipient
Transportation	Yes ( $p = .01$ )	Care recipient
Housekeeping	No ( $p = .22$ )	Not applicable

**Do Care Recipients and Professionals Vary in Their Assessment of the Sufficiency of Care?**—As seen in Table 1, professionals tended to rate the amount of care as less sufficient than the care recipients did (2.73 vs. 3.21); ( $t(84) = -4.9, p = .0001$ ). On average, the nurses were almost one half a point lower on the 4-point scale.

**What Specific Functional Need Areas Contribute to the Variation in Raters' Assessment of Sufficiency of Care?**—Ratings in each of nine ADL and IADL areas are compared in Table 3. Four functional areas (transfer, toileting, walking, and eating) were eliminated because the number of pairs of ratings was less than five. For each functional area in which both the care recipient and nurse agreed that there was a dependency, the mean care recipient rating of sufficiency of care was compared with the mean professional rating. As can be seen, the sufficiency ratings did not vary in three functional need areas. However, it should be noted that sample size drops quite low in two of these comparisons, and lack of statistical power could explain the null finding. Care recipients rated the sufficiency of care higher in five need areas (note that the marginally significant difference in

**Table 3. Sufficiency of Care: Differences Between Care Recipient and Professional Ratings by Functional Need Area**

Functional need area	Number of pairs of ratings	Significant difference between raters?	Higher score
Medications	23	Yes ( $p = .06$ )	Care recipient
Bathing	41	Yes ( $p = .00$ )	Care recipient
Grooming	11	No ( $p = .66$ )	Not applicable
Dressing	8	No ( $p = .41$ )	Not applicable
Meal preparation	24	No ( $p = .11$ )	Not applicable
Shopping	69	Yes ( $p = .00$ )	Care recipient
Money management	21	Yes ( $p = .00$ )	Care recipient
Transportation	56	Yes ( $p = .00$ )	Nurse
Housekeeping	77	Yes ( $p = .01$ )	Care recipient

medications is included, given a  $p$  value of .06 and a small sample size). Nurses rated assistance in the area of transportation as more sufficient than did care recipients.

**What Factors Are Associated With Sufficiency of Care From the Two Different Perspectives?**—Analysis of variance reveals that three variables have main effects on sufficiency of care: coresidence of care recipient and care receiver, health of caregiver, and rater identity (see Table 4). Two of these variables relate to the informal care system. Care was rated as more sufficient when care recipients lived with their caregivers and when caregivers were healthier. As reflected in earlier analyses, identity of the rater is related to sufficiency of care, with professional ratings being lower than care-recipient ratings. When the two informal support variables were tested in interactions with rater identity, the interaction effects were not significant. Thus, these variables are related to the sufficiency ratings, regardless of whether the rater was a care recipient or a professional. Of the 11 interaction terms tested, only 1 interaction was significantly associated with sufficiency of care. We found no main effect for amount of formal services and no relationship between formal services and sufficiency of care from the perspective of care recipients. However, for professionals, higher amounts of formal care were associated with lower sufficiency ratings.

## Discussion

We acknowledge both weaknesses and strengths in our conceptualization and measurement of the dependent variable, sufficiency of in-home care. The construct, sufficiency of care to meet elders' functional dependency needs, is but one aspect of the broader construct of quality of care. Our focus on the amount or quantity of care does not capture the important aspect of quality, or how good that care

**Table 4. Factors Associated With Sufficiency of Care (Dependent Variable)**

Variable	Estimate	St. Error	Probability
Age	.02	.01	.07
Nonwhite	-.19	.16	.27
Female	.09	.15	.56
SES	.001	.004	.74
Married	.15	.18	.39
Interference from chronic conditions	-.01	.02	.48
Cognitive status	-.02	.02	.33
Coresidence	.36	.17	.04
Presence of secondary caregiver	.18	.16	.24
Caregiver health	.26	.09	.01
Hours of formal services	-.10	.07	.18
Rater identity (care recipient/professional)	.54	.10	.0001
Rater identity $\times$ formal services	-.19	.08	.02

Notes: Sample Size = 79; Model  $F = 3.224, p = .001$ ; Model  $R^2 = .54$ . SES = socioeconomic status.



is. Yet quantity seems to be a minimal component of quality; how can care be construed as “quality” when there isn’t enough care?

Consistent with a few other examples in the quality of care literature (e.g., Skinner et al., 1999), we chose to measure our dependent variable, sufficiency of care, within specific areas of functional needs, with two important consequences. First, our data can reveal variations in sufficiency of care across the various ADL and IADL areas for which care is needed and provided. Findings thus have the potential to pinpoint specific areas of challenge or difficulty in providing enough care, as well as highlight areas of care for which the care provider and care recipient have different perspectives. Second, the resultant aggregate ratings of sufficiency should be more reliable than global ratings that are not tied to specifics.

This study’s findings replicate and build on prior work demonstrating that older adults rate their functional abilities higher than professionals. The study adds new knowledge regarding differences in perspectives by documenting that the assessments of sufficiency of care also vary by rater role. In general, care recipients rate amount of care as more sufficient compared with how professionals rate it. These findings are very consistent with related work that suggests older adults rate their functional ability and health higher than professionals do, as well as identify fewer problems and needs.

These data suggest that variance between nurse ratings and care recipient ratings of physical function derives from both ADL and IADL areas. In 10 out of 13 activities, care recipients rated their functional ability higher than nurses did. The nurses rated functional ability higher in only one area—bathing. Perhaps dependent elders are more conservative about their abilities in the area of bathing out of fear of falling in the bathroom.

When considering the source of variance from ADL and IADL areas in the sufficiency ratings, the pattern is less clear than in functional assessments. Care recipients rate their care as more sufficient in five out of nine need areas, with no statistical difference between the two ratings in three areas. In regard to transportation, nurses assessed the amount of help to be more sufficient. It may be that nurses view the amount of transportation as sufficient if it is enough to get the care recipient to necessary destinations, like medical appointments. The care recipient may view other trips as important as well, such as those for social visits or pleasure outings; the care recipient may assess help as less than enough if these trips are not occurring, whereas the nurse may view these types of trips as more discretionary.

Although this study does contribute to understanding how raters’ assessment of care varies, we did not capture information about why ratings are different. It is likely that care recipients are motivated to report sufficient levels of assistance for two reasons. First, as Donabedian noted, “unless special precautions are taken, patients may be reluctant to

reveal their opinions for fear of alienating their medical attendants” (1988, p. 1746). Particularly with elderly adults, Woodruff and Applebaum (1996) suggested that consumers’ perspectives may be influenced by their strong desire to remain independent and in their current living situations. Care recipients may lower their own standard of acceptability in regard to meal preparation, bathing, housekeeping, and so forth when faced with the reality of their needs and their available resources. Second, care recipients may not be willing to criticize their care providers, especially family members, by assigning low sufficiency ratings. On the other hand, professionals may maintain their standards of acceptable quantity of care across care recipients, with less threat (certainly less personal repercussions) about the consequences of the deficiencies. Additionally, they could be less concerned about judging care providers as deficient in some way. Our findings point to the need for further research on motivations leading to differences in ratings between different stakeholders in home care.

There are some similarities in factors associated with sufficiency ratings between the two perspectives. Two variables are important predictors from both perspectives: coresidence of caregiver and care recipient, and health of the caregiver. These two variables had main effects but no interaction effects in the regression analyses, reflecting the salience of these independent variables for both care recipient and professional. Remarkably, only characteristics of the informal caregiving network were related to the sufficiency of care ratings irrespective of rater. These findings speak to the critical role of informal caregivers in the community long-term care system. The proximity and the health of the primary helper affect the perceived sufficiency of the amount of assistance received. These findings suggest that if we are to increase the quality of in-home supportive care, we should focus on programs and policies that shore up the informal system.

In addition to caregiver proximity and caregiver health, one other independent variable affected professionals’ ratings of the sufficiency of care: amount of formal service. (In this sample of chronically ill elders in the post-acute period, there are comparatively high levels of formal service, which was planned as part of the parent study.) Interestingly, nurses rated care as less sufficient in situations with higher levels of formal care. Although counterintuitive, this finding is not infrequent in services research and often indicates limitations in measurement—specifically the inability to adequately capture and control for sickness or need level. That is, sicker or more dependent elders usually receive more formal care, yet despite higher levels of care, their care arrangements remain less adequate because of the high demands of the care situation. In this particular study, we might interpret this association to mean that, in the professional assessment, the addition of formal services does not bring the amount of care up to a sufficient level (or in the few cases in which there are only formal services involved, formal services alone are not



enough). These interpretations are consistent with our finding that caregiver proximity is a critical factor; often, formal providers are not as accessible or proximate as informal providers. In short, these findings suggest that a focus on formal care at expense of informal care is not sufficient to improve the quality of in-home supportive care.

Ratings of the sufficiency of care did not vary significantly by elder age, gender, race, or SES, whether from the perspective of care recipient or of the professional. This failure to find disparities in the sufficiency of care for various demographic groups, including those at risk for poorer health outcomes, may be reassuring from a social justice perspective.

Important implications from this study are that raters of sufficiency of in-home supportive care are not interchangeable, and that information source is a critical factor in quality of care studies. Both care recipient and professional ratings are valid because sufficiency perspectives may be based on different standards and different values—but they are not interchangeable. Program evaluators and researchers need to determine which perspective is most appropriate for the situation under study. Professional ratings may be more related to medical outcomes, such as readmission or morbidity, whereas care recipient ratings may be more related to quality of life or satisfaction measures. Program developers and funders also need to pay close attention to the source of information in needs assessments. As Rosow (1964) stated many years ago, problems of old age can be divided into two groups: those that they actually have or think they have and those the professionals think they have. More recently, Lenert, Ziegler, Lee, Sommi, & Mahmoud, (2000) pointed out that substituting providers' views for those of patients might lead to overtreatment of patients. In sum, these findings confirm that rater perspective is likely to have consequences for health service planning, delivery, and evaluations, and that various stakeholders define quality differently, which translates into different expectations of the health care system and thus differing evaluations of quality (McGlynn, 1997).

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Received February 2, 2001

Accepted July 31, 2001

Decision Editor: Laurence G. Branch, PhD

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