Activities of Daily Living Capabilities and Values of Long-Term-Care Facility Residents

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Key Words: activities of daily living evaluation • long-term care

Objective. The Minimum Data Set for Nursing Home Resident Assessment and Care Screening was used to compare staff-report and self-report of residents' capabilities in eight activities of daily living (ADLs) in one long-term-care facility (LTCF).

Method. The relative values residents placed on independence in each of the eight ADLs were compared with their self-reported capabilities in those ADLs. Subjects were 30 LTCF residents ranging in age from 45 to 96 years.

Results. Residents perceived themselves to be significantly more capable than did staff members for dressing (p < .05), toileting (p < .01), locomotion (p < .05), and personal hygiene (p < .001). For five of the ADLs, residents tended to report high capability in the ADLs they valued most.

Conclusion. These findings support the need to include resident self-assessment in treatment planning, because staff members' and residents' perceptions of ADL capabilities may differ.

In the Omnibus Budget Reconciliation Act of 1987 (OBRA 1987) (Public Law 100-203), uniform resident assessment and care planning were identified as two key strategies for improving quality of life in long-term-care facilities (LTCFs) that participate in Medicare and Medicaid programs (Morris, Hawes, Fries, et al., 1990b). The uniform assessment system, implemented in 1990, includes the Minimum Data Set for Nursing Home Resident Assessment and Care Screening (MDS) to assess status of nursing home residents and the Resident Assessment Protocol (RAP) to guide treatment planning with selected information from the MDS (Morris, Hawes, Fries, et al., 1990b). Activities of daily living (ADLs) of residents in LTCFs is one crucial focus of the MDS, because capability in ADLs was considered to affect the quality of life of residents.

The OBRA 1987 reforms increased involvement of occupational therapists in LTCFs because of the therapists' expertise in analyzing functional capability (Moon-Sperling & Pinson, 1991). In many LTCFs, occupational therapists assess residents' ADL performance and use the residents' perceptions of ADL capabilities to guide treatment planning. Congruence of resident and therapist assessments of ADL capabilities is important in setting mutual goals for treatment (Poulton, 1984; Ward-Griffin & Bramwell, 1990), because residents will be more likely to work toward mutually agreed-upon goals. Because use of the MDS is required in most LTCFs, it is important to examine whether the data that staff members record on this tool reflect residents' perceptions of their capabilities in ADLs.

Assessment with the MDS is done when persons are first admitted to the LTCF and yearly thereafter unless permanent changes occur in residents' conditions before that time. Residents are screened every 3 months to determine whether changes have occurred (Morris, Hawes, Murphy, & Nenemaker, 1990), thus assessment data are kept up-to-date. A registered nurse at the LTCF usually supervises and completes the MDS. ADL capability ratings on the MDS are usually acquired through a combination of data sources: residents' charts; reports by health care professionals, residents, and residents' families; and direct observation of ADL performance (Morris, Hawes, Murphy, et al., 1990b).

ADLs, as measured on the MDS, are self-care tasks that are performed daily. The eight ADL categories designated on the MDS include moving while in bed, getting out of bed, moving around in the rooms or hallways of the LTCF, dressing, eating, using the bathroom, bathing, and performing personal hygiene tasks such as brushing teeth, combing hair, and shaving or applying makeup (Morris, Hawes, Murphy, et al., 1990b).

Performance-based measures (e.g., Physical Performance Test, Reuben & Siu, 1990) have face validity for the task performed, provide reproducible results, and are sensitive to change in capability (Rozzini, Frisoni, Bian-
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Chetti, Zanetti, & Trabucchi, 1993). Observation of actual performance minimizes the influence of a resident's cognitive functioning, culture, language, or education level on assessment results. The disadvantages of performance-based tests are that they are time consuming, have a slight potential for injury to the resident, require adequate space and equipment, and necessitate special training for examiners (Guralnik, Branch, Cummings, & Curb, 1989).

The advantages of using staff-report ratings of ADLs are that staff members work closely with residents on a daily basis and that these ratings are faster to administer than performance-based measures. The advantages of using self-report measures are that they can be used to address a broad range of disabilities, can assess large numbers of residents quickly, are inexpensive, and require minimal time to complete (Harris, Jette, Campion, & Cleary, 1986). Self-report ratings, however, may result in conflicting data, especially if the respondent is anxious or depressed at the time of assessment (Malzer, 1988), or if questions are not specific or clear (Gromak & Waskel, 1989; Guralnik et al., 1989). For example, when asked if they bathe independently, residents may say yes because they wash independently, but may not consider the assistance they require to transfer in and out of the tub.

Studies comparing data from two or more assessment strategies have been inconclusive regarding the relationships between sources of data. Certain studies indicated differences between data sources. Rogers and Holm (1990) found that staff members rated patients as less capable than patients rated themselves. Rubenstein, Schairer, Wieland, & Kane (1984) demonstrated that nurses and family members or friends tended to rate elderly hospitalized patients lower in functional capability than the patients rated themselves. In another study, however, which examined ADL capabilities of inpatients 1 week before discharge from a rehabilitation facility, the occupational therapy and physical therapy staff members rated patients significantly higher in ADL capabilities than the patients rated themselves (McGinnis, Seward, DeJong, & Osberg, 1986).

Other studies yielded positive correlations between data sources. Shinar et al. (1987), who examined ADL capability ratings for outpatients, rehabilitation patients, and in-hospital stroke patients at one hospital, found a high correlation between self-report in a telephone interview and a performance-based test. The authors concluded that "for an overall evaluation, interviewing the patient [was] just as valid as interviewing a family member, a nurse, or a friend" (Shinar et al., p. 727). Ward-Griffin and Bramwell (1990) compared nurse perceptions of elderly patients' self-care ability with the patients' perceptions and found a significant positive correlation. The degree of congruence decreased, however, as patients' ages increased.

Despite the prevalence of studies comparing ADL assessment methods, few have focused specifically on residents of LTCFs. Furthermore, the results of studies conducted in acute care and hospital rehabilitation settings cannot be generalized with certainty to LTCFs because marked differences may exist between the functional statuses of the populations (Shapiro & Tate, 1988; Worobey & Angel, 1990).

LTCF residents' values of independence in ADLs may have an effect on their functional status (Baltes & Baltes, 1990; Baltes, Burgess, & Stewart, 1980). How much a person values independence in ADLs can influence capability in ADLs (Baltes & Baltes, 1990). Kielhofner and Burke defined values as "images of what is good, right and/or important" (1985, p. 17). According to Guralnik et al. (1989), elderly persons value independence in ADLs. Knowing how much an elderly resident values independence in an ADL task helps the therapist set meaningful goals for treatment (Snow & Rogers, 1985). Residents may experience frustration if they are urged to work at levels they believe are above or below their capability, or if they are urged to work on ADLs that have little value to them. Because residents are more likely to practice an ADL task if they value independent performance in it (Baltes & Baltes, 1990), guiding residents to work at the appropriate performance level on ADLs that are valued may enhance LTCF residents' quality of life.

The purpose of this study was to compare self-report with staff-report of LTCF residents' capabilities in ADLs. The completed MDS is a ready source of staff-assessment data that can be compared with LTCF residents' self-report of ADL capability. The relationship between the value residents place on independence in ADLs and self-report of capability in ADLs was also explored.

Method

Subject Inclusion Criteria

The Assistant Director of Nursing Services at the LTCF recommended potential subjects if they could hear the research questions, understand the research questions, communicate a response, and recall their capabilities in ADLs from the 7 days before the study. The researchers used sections B and C of the MDS to validate the recommendations of the Assistant Director. Inclusion criteria were: a rating of 0 or 1 in Memory Recall Ability (Section B, parts 3a and 2b); a check mark in Memory Recall Ability (Section B, parts 3a, 3b, 3c, and 3d); a rating of 0 or 1 in Cognitive Skills for Daily Decision Making (Section B, part 4); a rating of 0 or 1 in Change in Cognitive Status (Section B, part 6); a rating of 0, 1, or 2 in Hearing (Section C, part 1); a rating of 0 or 1 in Making Self Understood (Section C, part 4); a rating of 0 or 1 in Ability to Understand Others (Section C, part 5); and a rating of 0 or 1 in Change in Communication/Hearing (Section C, Part 6). Four residents who did not meet the rating of 0 or 1 in cognitive skills were
included as subjects, with concurrence by the Assistant Director, after the researcher determined in the screening interview that those residents were capable of answering the research questions.

Subjects

Eleven men and 19 women, permanent residents of an LTCF in the Pacific Northwest, served as subjects. They ranged in age from 45 to 96 years. Subjects had been residents for at least two weeks and had an up-to-date MDS on file. 26 were on a unit requiring a low level of nursing care, and 4 were on a unit requiring a moderate level of nursing care.

Instruments

The MDS. The MDS contains assessment data on residents and is used for treatment planning in LTCFs. Each section of this tool is used by nursing staff members to record assessment data about an aspect of health status (i.e., A = identification and background information, B = cognitive patterns, C = communication/hearing patterns, D = vision patterns, E = physical functioning and structural problems, F = continence in last 14 days, G = psychosocial well-being, H = mood and behavioral patterns, I = activity pursuit patterns, J = disease diagnoses, K = health conditions, L = oral/nutritional status, M = oral/dentistry status, N = skin condition, O = medication use, and P = special treatment and procedures (Morris, Hawes, Murphy, et al. 1990). Only data from the ADL component of Section E were used in this study. Section E lists eight ADLs: bed mobility, transfer, locomotion, dressing, eating, toileting, personal hygiene, and bathing. To distinguish ambulatory from non-ambulatory residents, transfer was further divided into transferring from bed to chair-to-bed, and transferring from bed to standing-standing-to-bed.

Staff-report: ADL capability. Three registered nurses from the two nursing stations rated level of independence in the eight ADLs from 0 to 4, with 0 representing the highest level of independence. They rated the subjects through a review of the residents' medical records and by questioning staff members who worked with and observed the residents on a daily basis. Section E of the MDS is designed to also incorporate resident self-assessment as one of the data sources. At the time of this study, however, the MDS was in an initial phase of implementation, and data from Section E of the MDS did not include resident self-assessment at the LTCF in the study; for this reason, the present study was undertaken.

Self-report: ADL capability. Self-report of subjects' level of ADL capability was also based on Section E of the MDS and rated in the same manner. Self-report data were gathered from subjects through a structured interview format.

Self-report: ADL values. Eight magnetized strips, each with a phrase and simple picture representing one MDS ADL, were placed on a magnetized board. The phrase relating to transfers addressed either transferring from bed to chair or transferring from bed to standing, depending on the subject's ambulation status. The subjects were asked to order the eight ADLs on the magnetic board according to how much they valued independence in each. ADLs were ranked by the researcher from 1 to 8 according to the order indicated by the subject. Placement at the top of the list (i.e., most valued) was assigned a rank of 1, placement at the bottom of the list (i.e., least valued) was assigned a rank of 8.

Procedures

Subjects who met the study inclusion criteria signed a consent form in accordance with the procedures of the LTCF. Data were collected in two ways. Staff member ratings of subjects' ADL capabilities were obtained from the MDS. Subjects' ratings of their ADL capabilities and the value they placed on independence in each of the ADLs were obtained through a structured interview. The first author conducted all interviews. The self-report of ADL capabilities and the ADL values interviews were conducted on the same day for each subject. During the interview, each subject's apparent comprehension of questions and the appropriateness of responses were verified to ensure that the subject's cognitive status was adequate for participation in the study.

Data Analysis

Means and standard deviations were computed for capability level in each of nine ADLs (i.e., seven ADLs plus two types of transfers) for both staff-report and self-report. Means were computed for stated value placed on independence for each of the ADLs.

The Sign Test (SPSS, 1991) was used to compute the number of times staff-report and self-report ratings were the same and the number of times they differed for each of the ADLs. The Spearman rho correlation coefficient was used to examine the relationship between self-report ratings of capability in each of the ADLs and subjects' stated value placed on independence in the same ADL.

For ease of interpretation, the range of capability levels was collapsed from a 5-point scale to a dichotomous scale of independent versus dependent. Likewise, the range of values was collapsed to a dichotomous scale of high value versus low value.

Results

In all nine ADLs except bathing, subjects perceived themselves as more capable than did the staff members (see Table 1). Mean capability ratings of both staff-report and
self-report indicated highest capability for the activities of eating and transferring to standing, and lowest capability for the activities of transferring to a chair, dressing, and bathing. Mean staff-report capability ratings ranged from a low for transferring to a chair (M = 2.58) to a high for eating (M = 2.03). Mean self-report capability ratings ranged from a low for bathing (M = 2.67) to a high for transferring to standing (M = 0.00). Mean subject-rated values placed on ADL independence ranged from a low for bed mobility (M = 5.93) to a high for eating (M = 3.10).

Variability in staff-report for ADL capability was least for eating (SD = 0.63) and greatest for toilet use (SD = 1.88). Self-report variability was least for transferring to standing (SD = 0.00) and greatest for dressing (SD = 1.71).

The Sign Test revealed significant differences between self-report and staff-report of capability in four of the nine ADLs. Subjects perceived themselves to be significantly more capable than did the staff members for dressing (p < .05), toileting (p < .01), locomotion (p < .05), and personal hygiene (p < .001). In transferring to standing, staff-report and self-report indicated the same level of capability in 10 out of 11 ratings (see Figure 1).

Spearman rho correlations between subjects' self-report of capability in ADLs and the value placed on independence in specific ADLs were significant only for eating (-.32, p < .05) and bathing (0.40, p < .05). These data suggest that while subjects' perceptions of their capability in eating decreased, the value they placed on independence in eating increased. As subjects' perceptions of their capability in bathing tasks decreased, so did their value for independence in bathing.

Distribution of scores revealed that in five of the nine ADLs (transfer to standing, locomotion, dressing, eating, and personal hygiene), one half or more of the subjects perceived themselves as having high capability and also placed high value on these ADLs. In one ADL task (bathing), less than half of the scores were distributed into high capability and high value. Table 2 displays the distribution of ADLs across high and low categories for both capability and value, based on the majority of ratings in each ADL.

Discussion

ADL Capability

Results of this study suggest that residents of one LTCF perceived themselves as more capable in most ADLs than did the staff members. This difference in perception was particularly striking in locomotion, dressing, toileting, and personal hygiene activities, although it was also true in bed mobility, transferring to a chair, transferring to standing, and eating. Bathing was the only one of the ADLs in which residents perceived lower capability than did staff members.

Even though residents perceived themselves as more capable than did the staff members, the rating trends were parallel. For example, both residents and staff members perceived that residents were most capable in eating and transferring to standing, and least capable in transferring to a chair, dressing, and bathing.

The differences between staff-report and self-report might be due to residents overestimating their abilities in ADLs. Residents may have wished to denote dependency to avoid the perception of being a burden, or might have perceived their functional levels as they were in the past when the residents were more independent (Carp & Carp, 1981).

The results could also indicate that staff members underestimated residents' capabilities. Staff members may have been influenced by perceived responsibility for the safety of residents. Staff members may also have responded to residents' levels of everyday performance as opposed to the residents' actual capabilities (Baltes &

Table 1
Mean Staff Member and Subject ADL Capability Ratings, and Mean Subject Values for ADL Independence

<table>
<thead>
<tr>
<th>Activity</th>
<th>M Capability</th>
<th>M Value</th>
<th>SD Capability</th>
<th>SD Value</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bed mobility</td>
<td>1.03</td>
<td>5.93</td>
<td>1.69</td>
<td>0.60</td>
<td>30</td>
</tr>
<tr>
<td>Transfer to chair</td>
<td>2.58</td>
<td>3.63</td>
<td>1.68</td>
<td>1.35</td>
<td>19</td>
</tr>
<tr>
<td>Transfer to standing</td>
<td>0.36</td>
<td>0.00</td>
<td>1.21</td>
<td>0.00</td>
<td>11</td>
</tr>
<tr>
<td>Locomotion</td>
<td>1.30</td>
<td>4.27</td>
<td>1.66</td>
<td>1.03</td>
<td>30</td>
</tr>
<tr>
<td>Dressing</td>
<td>2.40</td>
<td>4.47</td>
<td>1.59</td>
<td>1.71</td>
<td>30</td>
</tr>
<tr>
<td>Eating</td>
<td>0.25</td>
<td>3.10</td>
<td>0.63</td>
<td>0.25</td>
<td>50</td>
</tr>
<tr>
<td>Toilet use</td>
<td>1.70</td>
<td>5.07</td>
<td>1.88</td>
<td>1.43</td>
<td>30</td>
</tr>
<tr>
<td>Personal hygiene</td>
<td>1.80</td>
<td>4.13</td>
<td>1.70</td>
<td>1.00</td>
<td>30</td>
</tr>
<tr>
<td>Bathing</td>
<td>2.57</td>
<td>5.20</td>
<td>1.45</td>
<td>1.35</td>
<td>30</td>
</tr>
</tbody>
</table>

Note. Capability ratings were based on a scale from 0–4 with 0 representing total independence and 4 representing total dependence in activities of daily living (ADL) capability. Value ratings were based on a rank of 1–8 with 1 representing highest stated value and 8 representing lowest stated value.

Table 2
Distribution of ADL Capability Based on High and Low Value for Independence in the Same ADLs

<table>
<thead>
<tr>
<th>Value</th>
<th>High</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>Transfer to chair</td>
<td>Laundry</td>
</tr>
<tr>
<td></td>
<td>Locomotion</td>
<td>Dressing</td>
</tr>
<tr>
<td></td>
<td>Eating</td>
<td>Personal hygiene</td>
</tr>
<tr>
<td></td>
<td>Bed mobility</td>
<td>Bathing</td>
</tr>
<tr>
<td></td>
<td>Toileting</td>
<td></td>
</tr>
</tbody>
</table>
Baltes, 1990; Baltes et al., 1980; Harris et al., 1986). Circumstances in an LTCF can also affect residents’ self-assessments of their capabilities. Many subjects in this study who perceived themselves as fairly independent in locomotion and transferring nonetheless reported routine help from one or two assistants as well as the use of a hoist when they bathed. In fact, the LTCF commonly provided a high level of assistance to most residents for bathing. The LTCF’s requirement of assistance in bathing to prevent injury might have influenced subjects to perceive their capabilities in bathing as lower than they actually were. Data suggest that bathing was the one ADL in which residents perceived themselves lower in capability than did staff members. On a preventative note, increased assistance in other ADLs when safety is not an issue might also influence residents’ self-perception of capability in those ADLs, and thus contribute to excess perception of disability.

The study’s findings may alert occupational therapists in the LTCF to the possibility of differences between their own perceptions of residents’ capabilities in ADL and the residents’ perceptions. The ADL section of the MDS is designed to be completed by nursing staff members who have gathered data from a variety of sources, including staff members and residents. The rating that is entered into the MDS may reflect staff member perceptions more than resident perceptions. More specifically, if therapists are aware that residents may perceive themselves as more capable than is indicated on the MDS, the therapists might use treatment plans that target more challenging goals than they would have without that knowledge. Additionally, in some LTCFs, occupational therapists are being asked to establish criteria for staff members to use when rating in the ADL section of the MDS. Because the findings of this study indicate that staff member and resident perceptions do not always agree, the weight given to each data source before it is entered into the MDS should be established within each LTCF.

**ADL Capability and ADL Values**

A majority of residents reported a high level of independence for the activities of transferring to standing, locomotion, dressing, eating, and personal hygiene. For these same ADLs, a majority of residents also reported a high value placed on independence. It is unknown whether these ADLs were valued more highly because they were easier, or whether they were valued highly and therefore...
were worked at more diligently, resulting in higher capability. Garrison stated that “patient learning is enhanced when specific interests and values are addressed” (1991, p. 51).

**Study Limitations**

One explanation of the differences between staff-report and self-report may pertain to limits in the methodology of this study. Criteria for levels of independence in the MDS were paraphrased for residents to elicit their self-report. The change in phrasing may have influenced the responses of residents. Rubenstein et al. suggested that “vigorous reliability and validity testing is important whenever a data collection instrument is used in a way different from the way it was originally developed and tested” (1984, p. 691). Another factor in testing concerned the training of the subject interviewer. The MDS was developed to be completed by a trained staff person in an LTCF (Morris, Hawes, Murphy, et al., 1990), but the first author of the present study was not a trained staff person in the LTCF. This may have affected the gathering of the self-report data. Future studies should establish reliability of the ADL component of the MDS as a self-assessment instrument.

Two potential threats to validity existed in this study. The procedures required the subjects to order ADLs according to the way they placed on independence in each, regardless of the subjects’ actual capabilities. Use of the magnetic board allowed subjects to view all ADL phrases at one time, and physically placing the ADL items in a hierarchy for value reinforced the concept of most valued to least valued independence in ADLs. However, after ranking ADLs for value, several subjects reported their perception of their capability in certain ADLs. This might have indicated a misunderstanding of the question. Thus, in some instances, the researcher might have actually recorded residents’ perceptions of their capabilities rather than the values they placed on ADL independence.

A second potential threat to the validity of this study was the variable amount of time that had elapsed since the staff-report was recorded. The MDS assessment schedule, however, required that within 14 days of a major, seemingly permanent change in a resident’s status, a new MDS assessment must be conducted (Morris, Hawes, Murphy, et al., 1990). Because a change in resident status would always be reflected on the MOS, and none was noted for any of the subjects, the elapsed time between measures was not considered a threat to the validity of this study.

**Conclusion**

This study compared staff-report and self-report of capability in ADLs, using the Minimum Data Set for Nursing Home Resident Assessment and Care Screening (MDS). In addition, the study examined relationships between residents’ perceived capabilities in ADLs and their stated value placed on independence in the same ADLs. Residents tended to perceive themselves as more capable than did the staff members for all ADLs listed in the MDS, except bathing. Residents perceived themselves to be significantly more capable than did the staff members for locomotion, dressing, toileting, and personal hygiene. In addition, residents tended to report high capability in those ADLs that they valued most. Because staff member and resident perceptions of residents’ ADL capabilities were not always the same, these findings validate the need to include, as well as ascertain, residents’ perceptions in the ADL section of the MDS. ▲

**Acknowledgments**

We thank Meredith Back, Director of Nursing; the nurses; nurses’ aides; and residents who cooperated in this study at Martha and Mary Nursing Home, Poulsbo, Washington. Without their generous assistance, this study could not have been completed.

This article was written in partial fulfillment of the requirements for Shelly M. Arwood’s degree of Master of Occupational Therapy from the University of Puget Sound, Tacoma, Washington.

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Omnibus Budget Reconciliation Act of 1987 (Public Law 100-203), § 101.


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