Many cognitively impaired nursing home (NH) residents are excluded from interviews measuring quality of life or care based on the belief that these residents cannot accurately answer questions. These exclusions are based on subjective criteria and ignore individual differences among cognitively impaired NH residents. This study describes a screening rule based on four minimum data set (MDS) indicators that provides an objective method for identifying residents capable of accurate report. Sixty percent of a sample of 83 NH residents who could answer yes or no questions about their care could do so accurately. Eighty-one percent of the sample was correctly classified by the MDS indicators.

Key Words: Competence, Long-term care, Quality of care

Selecting Nursing Home Residents for Satisfaction Surveys

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Objective criteria that can be used to identify nursing home residents who are capable of accurately reporting the occurrence of daily care activities are described in this article. These criteria can be used to select residents for interviews concerning the quality of their care and life in the nursing home (NH).

Concerns over quality of life and medical care have become a priority as large numbers of persons live longer with chronic conditions. Recent literature suggests that resident satisfaction with life in the nursing home is a key indicator of the quality of care provided by the facility (McDaniel & Nash, 1990; Pearson, Hocking, Mott, & Riggs, 1993; Prehn, Mayo, & Weisman, 1989; Zinn, Lavizzo-Mourey, & Taylor, 1993). Moreover, resident satisfaction information may provide knowledge about NH care that is different from clinical indicators or information provided by family and NH staff members (Berlowitz, Du, Kazis, & Lewis, 1995; Cohn & Sugar, 1991; Kane, Bell, & Riegler, 1986; Lavizzo-Mourey, Zinn, & Taylor, 1992). Previous efforts to address the issue of quality of care or life among institutionalized elderly persons have collected information primarily from family members or NH staff. Of those studies including residents, subjective or arbitrary screening criteria have resulted in a large percentage of the resident population being excluded from participation. Aller and Coeling (1995) reported results of a qualitative study regarding quality of life and its meaning to NH residents in which 130 out of 142 residents were screened out according to the criteria of being legally incompetent or judged by a social worker and director of nursing as being unable to participate in a 20- to 30-minute interview. Two recent studies have described NH resident satisfaction and the relationship of this satisfaction to both organizational and resident interpersonal characteristics (Kruzich, Clinton, & Kelber, 1992; Pearson et al., 1993). In both studies, residents or NH staff, or both, were interviewed; however, many residents with more severe cognitive impairment were excluded from the surveys. Pearson and colleagues (1993) excluded an unspecified number of residents who were determined by research staff to be unable to respond to the interview questions. The authors did acknowledge that their approach ignored the perceptions of those residents who are confused or disoriented. Kruzich and colleagues (1992) collected information from staff and a sample of 289 residents in 51 NHs. Any resident diagnosed with Alzheimer’s disease was excluded. Of those residents interviewed, 61% were cognitively intact as measured by the Short Portable Mental Status Questionnaire (Pfeiffer, 1975) and 39% had mild to moderate impairment. Mattiasson and Andersson (1995) assessed quality of NH care through interviews with only 18% of the total resident population judged by the head nurse to be sufficiently cognitively oriented to participate in an interview.

It is clear from these studies that the majority of NH residents are being excluded from interviews regarding their quality of life and care. Moreover,
that differ between studies. Even the state and federal survey process uses nonspecific criteria to choose residents for interviews when attempting to evaluate the quality of NH care. The Health Care Financing Administration (HCFA) survey procedures for long-term care facilities define an interviewable resident as: “...a resident who has sufficient memory and comprehension to be able to coherently answer the majority of questions contained in the Resident Interview. These residents can make day-to-day decisions in a fairly consistent and organized manner” (Department of Health and Human Services, 1995, p. 13). In practice, survey staff either make a subjective determination of which NH residents are interviewable or ask the NH staff to identify interviewable subjects. In either case, an objective definition of the term interviewable is not applied.

It is understandable why many NH residents are excluded from such interviews given the prevalence of cognitive impairment in the NH setting (Aronson et al., 1992). The reality is that the direct customers of NH services (residents) exhibit a wide range of cognitive impairment that makes collecting and interpreting verbal or written information from them problematic. One solution to this problem is to identify resident cognitive and behavioral characteristics that are available in all NH records and that are predictive of residents’ ability to accurately answer questions about care. Unfortunately, the available methods used to describe the cognitive and behavioral characteristics of NH residents do not include specific procedures to determine which residents are capable of accurately reporting care activities, nor is there a specific decision rule available that relates these characteristics to the residents’ ability to participate in interviews. In this study, we attempt to approach this problem by addressing the following questions:

1. How many NH residents can answer simple yes or no questions about their daily care and life experiences when no preset cognitive criteria are used to exclude residents?
2. How many of those NH residents capable of responding to simple yes or no questions can do so accurately?
3. Is it possible to identify those residents who are “accurate responders” utilizing descriptive information available in all NHs, and, if so, how well (sensitivity and specificity) can those residents be identified?

Methods

Subjects and Setting

Figure 1 illustrates the subject selection process that characterizes the different stages of this study. Members of the sample were recruited from two nonprofit and one proprietary NH located in Southern California ranging in size from 110 to 248 beds.

Two of the NH facilities were sectarian with primarily Caucasian residents, and the third NH was a nonsectarian facility with primarily African American residents. The total target population across the three facilities was 435 residents. An attempt was made to include all residents in the smaller facility (Facility A), whereas in the two larger facilities (Facilities B and C) 164 residents were selected through a stratified, proportional random sampling procedure. This procedure was designed to accurately reflect the proportion of residents within each of four Cognitive Performance Scale (CPS) categories in the two larger facilities (Hartmaier, Sloane, Guess, & Koch, 1994). The categorization of the CPS is described later in the Methods section. The 164 residents randomly selected across the four CPS score levels represented 50% of the total resident population in the two larger facilities. Thus, a total of 274 residents (110 + 164) across the three NHs were targeted for resident satisfaction interviews.

Initial Interview Procedure

The Resident Satisfaction Interview (RSI) protocol included 42 questions designed to measure whether residents’ requirements for daily care and life in the NH were being met in the following six domains: help and assistance, communication with staff, autonomy and choice, companionship, food and environment, and safety and security. Interviews with residents were conducted by nine trained and supervised research staff. Interviewers were aware of hearing and vision impairments, but were not informed of each resident’s CPS score at the time of the interview. The RSI questions were designed to elicit a simple yes or no response. Subjects who answered “sometimes” were accommodated by the use of a three-point scale. A sample question from the RSI is, “Do the people who work here take you to the toilet when you want?” The average length of time to conduct an interview was 13.4 minutes (±8.5).

Attempts were made to locate all 274 subjects for interviews on three different days. Consent was obtained for 257 subjects (94%). The 17 subjects (6%) who could not be located had either been hospitalized, discharged, transferred to a different facility, died, or had regular medical treatments (such as daily hemodialysis) that made locating them difficult. Interviewers asked a minimum of seven questions before an interview was discontinued due to no response. Five of these seven questions represent the screening interview schedule (SIS) and include the following: (1) What is your name? (2) Did you get food today? (3) Did you get your [fill in previous meal] today? (4) Did you get your [fill in upcoming meal] today? and (5) Do you get your medicines by yourself? For the purpose of the initial interview, all residents who answered any of these five questions with a yes or no response (or a nod or shake of the head), whether or not those answers were correct, were considered eligible for study participation.
Accuracy Validation Procedure

The study included two validation phases. The first phase addressed the residents' accuracy of reporting specific daily care activities performed by indigenous NH staff. A convenience sample, stratified by CPS, of 83 of those residents completing all or part of the initial RSI in the two nonprofit, sectarian facilities was selected to participate in the validation study. Three daily care activities were targeted for behavioral observation: toileting/adult diaper change, walking and wheelchair mobility, and social activity participation. Trained research staff conducted time-sampled, behavioral observations for a minimum of one minute out of every 15-minute interval across eight hours (6 a.m.–2 p.m. or 7 a.m.–3 p.m.) to identify whether indigenous NH staff or residents, or both, performed the target behaviors. We elected to use this time-consuming behavioral observation procedure to confirm care activities because of our concern that NH staff would not provide accurate reports. An observation checklist was utilized to record both the occurrence of the three daily care activities and whether these activities were performed independently by the resident or with assistance from a staff member. At the end of the 8-hour observation period, a different research assistant—who was not aware of the results of the behavioral observations—administered a 12-item interview that comprised structured questions regarding the occurrence of and the extent of staff assistance provided for these care activities. The 12-item validation interview had an alpha coefficient of .88. Item-total correlations among the 12 items ranged from .27 to .77.

The resident's response was validated against the behavioral observations conducted throughout the day. There were four possible resident response/research staff observation scenarios: (a) If a resident responded "yes" to a question about a care activity such as toileting and toileting assistance was observed, then the resident was scored as accurate; (b) if a resident responded "no" and assistance was observed, then the resident was scored as inaccurate; (c) if a resident responded "no" and there was no observation of assistance being provided, then the resident was scored as accurate; (d) if the resident responded "yes" and assistance was not observed, then the resident was not scored and entered phase two of the validation procedure. The purpose of the second phase of the validation procedure was to determine the accuracy of responses related specifically to those care activities reported by residents but not directly observed by research staff.

A subgroup of 37 residents from the total validation sample (n = 83) reported the occurrence of a daily care activity that was not directly observed by research staff. The methods used to accomplish this validation involved research staff, as opposed to indigenous NH staff, providing mobility or incontinence care, or both. Trained research staff provided incontinence or mobility assistance, or both, in the morning in addition to conducting time-sampled behavioral observations during scheduled social activities. A different research assistant interviewed subjects in the afternoon, asking only those questions from the interview that were directly verifiable based on research staff care provision. Data from both phases of the validation study were combined to compute each resident's accuracy percentage for all 12 items representing the three observed care areas.

Subject Descriptors and Predictive Analyses

Demographic and functional status information was retrieved from the most recent Minimum Data Set (MDS) for each of the 257 subjects who were located. The MDS is a comprehensive and standardized assessment protocol that is completed quarterly in all NHs. Age, gender, and ethnicity were used to describe subjects but were not used in predictive analyses. Length of NH residency in addition to 20 MDS items were used in analyses designed to predict a resident's accuracy. These 20 items were taken from the following MDS sections: (B) Cognitive patterns; (C) Communication/Hearing patterns; (E) Physical functioning and structural problems; (F) Bladder continence; and (G) Psychosocial well-being. Items from these sections were selected because of the authors' belief that they would be conceptually related to a subject's ability to describe daily care activities and life experiences. Three scale scores were derived from the 20 MDS items in these sections and entered into predictive analyses. In addition, the five-question behavioral screen (SIS) was significantly correlated with the validation accuracy score and was utilized in subsequent analyses.

The Cognitive Performance Scale (CPS) score was computed from five MDS items (Hartmaier et al., 1994), with scores ranging from 0 (cognitively intact) to 6 (severe cognitive impairment or comatose). The CPS has been documented to be correlated with conventional measures of cognitive status such as the Mini-Mental State Exam (MMSE; Folstein, Folstein, & McHugh, 1975; Hartmaier et al., 1995). Subjects were grouped into the following four CPS score categories: 0–1, 2, 3, and 4–6 for the purpose of data analyses. Because CPS was central to our efforts to predict resident accuracy, the relationship between CPS and MMSE scores was verified by administering the MMSE to a random sample of 37 subjects from the validation study sample of 83 subjects. Residents representing all levels of cognitive functioning, as measured by both the CPS and the MMSE, were represented in the validation study (Table 1).

The second score derived from the MDS was an overall measure of activities of daily living (ADLs) that was computed as the mean of nine basic ADL items: bed mobility, transfer, locomotion, dressing, eating, toilet use, personal hygiene, bathing, and bladder continence. These nine items are scored on a 0 (no help to oversight or help provided 1–2 times per week) to 4 (full staff performance of activity during entire 7 days) scale. The alpha coefficient for the composite ADL score was .93.

The third score derived from the MDS was a sum-
Table 1. Accuracy on Interview Questions by CPS Category for the Validation Sample (n = 83)

<table>
<thead>
<tr>
<th>CPS Category</th>
<th>Number (%) of Residents</th>
<th>% Accurate 12-item Interview Mean ± SD</th>
<th>% Who Exceed the 80% Pass Point 12-item Interview</th>
</tr>
</thead>
<tbody>
<tr>
<td>0,1</td>
<td>18 (21.7%)</td>
<td>93.1 ± 10.8</td>
<td>89%</td>
</tr>
<tr>
<td>2</td>
<td>20 (24.1%)</td>
<td>94.5 ± 9.4</td>
<td>90%</td>
</tr>
<tr>
<td>3</td>
<td>30 (36.1%)</td>
<td>77.1 ± 21.6</td>
<td>52%</td>
</tr>
<tr>
<td>4,5,6</td>
<td>15 (18.1%)</td>
<td>46.2 ± 29.2</td>
<td>17%</td>
</tr>
</tbody>
</table>

Note. CPS = Cognitive Performance Scale.

The following measures of mood were constructed from MDS items but were not included in the predictive analyses due to a lack of internal consistency and insignificant correlation with the 12-item validation interview score: unsettled relationships; past roles; sad or anxious mood; mood persistence, or psychiatric mood diagnoses such as anxiety or depression; and antidepressant medication use. Other MDS items included in exploratory analyses but subsequently dropped due to insufficiency were vision and the Resource Utilization Group (RUG-MDS) score.

Data Analyses

Descriptive statistics were calculated for demographic and functional variables to describe the subjects. A pass point of 80% correct on the validation interview was established in order to classify subjects as accurate or inaccurate. The probability of obtaining an accuracy score of 80% or higher on the validation interview by chance is less than .05. Two primary analyses were conducted to address the third research question. First, an exploratory analysis was conducted to identify all independent variables significantly correlated with the dependent variable, total percentage correct on the 12-item validation interview. Second, a discriminant function analysis was conducted to determine significant predictors of accurate responsiveness regarding daily care and life experiences in the NH. Subsequently, sensitivity and specificity percentages based upon the four significant predictors identified in the discriminant function analysis were determined by comparing the predicted to the observed accuracy score on the 12-item interview for the 83 subjects. In addition, a one-way analysis of variance (ANOVA) was conducted to test differences in the validation percent correct score by CPS category. This latter analysis was conducted because cognitive status, as measured by the CPS, was both conceptually and empirically related to the validation accuracy score.

Results

A total of 257 residents in three facilities were interviewed concerning their daily care and life experiences in the NH with the RSI. Of these 257 residents, a total of 202 residents completed all or part of the RSI (Figure 1). This group of 202 residents is composed of 83 residents who participated in both the RSI and the validation study (RSI + validation) and 119 residents who participated in the RSI study alone (RSI-only). The characteristics of the total participant group, the RSI + validation subgroup, and the RSI-only subgroup are listed in Table 2. Both the RSI + validation and RSI-only samples reflect a typical NH population in that they are old, long staying, physically dependent, and cognitively impaired residents.

In comparing those residents who participated in the RSI + validation study with those who partici-
Of the 257 residents in three facilities interviewed with the RSI, 39 (15%) failed to respond to any of the first seven questions on two different days, and the interview was discontinued. A total of 16 residents (6%) refused to cooperate with the interview protocol, and 8 (3%) were capable of answering the yes or no questions but completed only part of the interview. A total of 194 (76%) were capable of answering the yes or no questions and cooperated with the entire interview protocol. In response to research question one, 79% of those residents accessible for interview in three NHs cooperated at least partially with the interview protocol and were capable of answering simple yes or no questions about their daily care and life experiences when no preset cognitive criteria were used to exclude residents. The majority of residents (67%) who either refused or failed to respond to any of the first seven interview questions were in the lower CPS categories. This accounts for the lower number of residents in CPS category 4–6 (Table 1).

A one-way analysis of variance (ANOVA) revealed a significant difference in the percentage of correct responses to the validation questions across CPS score categories, $F(3,80) = 23.5, p < .001$. Table 1 shows that residents within CPS score categories 0–1 and 2 responded correctly to 93.1% (±10.8) and 94.5% (±9.4) of the 12 validation items, respectively. In comparison, residents within CPS score category 3 responded correctly to 77.1% (±21.6), and those in CPS score category 4–6 responded correctly to 46.2% (±29.2) of the items. Tukey post-hoc comparisons between CPS categories showed that residents with a CPS score of 3 had a significantly lower accuracy percentage than residents with CPS scores of 0, 1, and 2. In addition, residents with CPS scores of 4, 5, and 6 scored significantly lower percentage correct than all other CPS scores (Table 1). The fourth column of Table 1 illustrates that residents within each CPS category whose correct responses on the 12-item validation questions were in the lower CPS categories, $F(3,80) = 23.5, p < .001$. Table 1 shows that residents within CPS score categories 0–1 and 2 responded correctly to 93.1% (±10.8) and 94.5% (±9.4) of the 12 validation items, respectively. In comparison, residents within CPS score category 3 responded correctly to 77.1% (±21.6), and those in CPS score category 4–6 responded correctly to 46.2% (±29.2) of the items. Tukey post-hoc comparisons between CPS categories showed that residents with a CPS score of 3 had a significantly lower accuracy percentage than residents with CPS scores of 0, 1, and 2. In addition, residents with CPS scores of 4, 5, and 6 scored significantly lower percentage correct than all other CPS scores (Table 1). The fourth column of Table 1 shows the percentage of the validation sample within each CPS category whose correct responses on the 12-item validation interview exceed the 80% correct pass point criterion. The fourth column of Table 1 illustrates that when the probability of passing the 80% correct pass point criterion on the validation interview is taken into account, 89% and 90% of those residents scoring within CPS categories 0–1 and 2, respectively, fall above this criterion. Surprisingly, 52% of those residents with a CPS score of 3 exceed the criterion. Only 17% of those residents with CPS scores of 4–6 exceed the criterion; however, a large standard deviation exists in the mean percentage of accurate responses (column 3). This indicates that a subgroup of those NH residents with the lowest cognitive functioning can still respond accurately to questions about their daily care and life experiences above the 80% pass point criterion.

A cutoff mastery score of 80% correct was established in order to classify subjects as accurate or inaccurate in their responses to the validation interview. Sixty percent ($n = 50$) of the validation study total sample ($n = 83$) exceeded the cutoff score and were classified as “accurate responders” (Table 1).
correlation matrix revealed six MDS-derived variables as significantly (p < .05) correlated with the dependent variable (total percentage correct on the 12-item validation interview): age, length of NH residency, CPS, ADL, Involvement, and hearing. The correlations for these six variables ranged from -.09 to -.66. In addition, the five-question behavioral screen (SIS) was also significantly correlated with the dependent variable.

A discriminant function analysis using these seven variables identified four variables that discriminated between accurate and inaccurate subjects: ADL, CPS, length of NH residency, and Involvement (Wilks’ lambda = .62, p < .001). The structure matrix coefficients (correlations between each of the four variables and the discriminant function) were .86, .77, .40, and -.38, respectively. The standardized discriminant function weights for these four variables were .63, .44, .33, and .03, respectively. In other words, the more physically dependent ADL score, more cognitively impaired CPS score, longer NH residency, and less involved subjects were more likely to be associated with membership in the inaccurate group. Table 3 shows that a total of 81% of the subjects were correctly classified based upon these four predictor variables (88% of the accurate group and 70% of the inaccurate group). These percentages define the sensitivity (88%) and specificity (70%) of the four predictor variables. However, if a prediction rule based on these four variables was utilized to select NH residents for satisfaction interviews, then only those residents with a CPS score of 0 to 3 would be included. All residents in CPS score categories 4–6 would be excluded, and it is the exclusion of those residents within this lower cognitive functioning category who can accurately report care that primarily reduces the sensitivity of the prediction rule (Table 3).

### Discussion

The results from the present study show that 60% of those NH residents capable of responding to simple yes or no questions about their daily care and life experiences in the NH can do so accurately. However, there are two primary points that should be emphasized with respect to these results. First, the generalizability of these findings is limited given the small and predominately Caucasian sample included in the validation study. Second, NH residents’ ability to accurately report the occurrence or nonoccurrence of specific daily care activities may be different from their ability to report on their satisfaction with these care activities and related quality of life. It may be that residents who are inaccurate as defined in this study (i.e., unable to recall specific daily care activities) may remain capable of reporting on their satisfaction with general NH care in a way that reflects the quality of that care and their quality of life. The sensitivity of satisfaction measures to interventions designed to improve care should be evaluated with both accurate and inaccurate residents until more is known about how dementia and accuracy affect satisfaction measures. In any case, it is likely that a substantial segment of the NH population has been inappropriately excluded from previous resident interviews given the informal screening criteria that have been historically utilized.

The relationship between NH resident accuracy, as defined by the 80% pass point criterion on the validation interview, and MDS information established in this study demonstrates that there is an objective way to identify those residents who are capable of accurately reporting the occurrence or nonoccurrence of daily care activities and life experiences within the NH. Moreover, the variables utilized to predict such accuracy are contained within the MDS, which is available in all NH facilities. However, the current decision rule to predict NH residents’ accuracy based only on MDS information should be applied with caution due to two important limitations. First, the 80% correct pass point criterion, although exceeding chance accuracy, still allows for a maximum of 20% of the responses on the validation interview to be incorrect. This error rate may be unacceptable if the information from residents is to be used to provide feedback to staff in a quality assurance program. For example, if staff are to be told that a resident reported he or she was not provided with walking assistance, then it is imperative that the resident be highly accurate. Second, the sensitivity and specificity of the rule, specifically for those NH residents with lower cognitive functioning, need to be improved. The sensitivity of the current rule means that 88% of those residents capable of accurate self-report will be correctly identified and recommended for interview. The specificity of the rule means that 70% of those residents who are inaccurate will be appropriately excluded from such interviews. Overall, the prediction rule established in the present study correctly classifies 81% of the sample as being accurate or inaccurate according to the 80% correct pass point criterion on the validation interview. Although this is a notable improvement over subjective criteria previously utilized to identify interviewable residents, 19% of the NH validation sample is still being falsely classified, either inappropriately excluded (12%) or inappropriately included (30%).

In examining the CPS score distribution of those incorrectly classified by the rule (n = 16), four resi-

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**Table 3. Sensitivity and Specificity of the Prediction Rule**

<table>
<thead>
<tr>
<th>Predicted Accuracy</th>
<th>Accuracy in Validation Studya</th>
<th>Inaccurate</th>
<th>Accurate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accurate</td>
<td>44</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Inaccurate</td>
<td>6</td>
<td>23</td>
<td></td>
</tr>
</tbody>
</table>

*Note. Sensitivity = 44/50 = 88%. Specificity = 23/33 = 70%. % of cases classified correctly = 67/83 = 81%.
*aUsing prediction rule (see text).
*bUsing 80% correct criterion (see text).*
dents within CPS categories 0–2 (cognitively intact to mildly impaired) contribute to inappropriate inclusions, whereas 10 residents in CPS category 3 and two residents in CPS category 4–6 contribute to both inappropriate inclusions and inappropriate exclusions. Thus, both the sensitivity and specificity of the prediction rule are reduced among those residents with CPS scores of 3 and 4–6 (moderate to severe cognitive impairment). The residents in the lower cognitive functioning group who are capable of accurate report but who are not being correctly classified by the current rule are a particularly important group to include in resident satisfaction interviews. Previous studies suggest that cognitively impaired NH residents are more likely to receive substandard care from staff, and they are at a higher risk for both physical and emotional abuse (Coyne, Reichman, & Berbig, 1993; Kosberg, 1988; Lacks & Pillemer, 1995; Pillemer & Finkelholz, 1988; Wolf 1988). Thus, the results of satisfaction surveys that exclude the NH residents with more severe impairments may inflate the satisfaction level of a NH population (Aller & Coeling, 1995; Kruzich et al., 1992).

There are five primary limitations of the present study. First, more subjects are needed to confirm the validity of the prediction rule as it currently stands. In addition to including minority NH residents in the validation process to determine accuracy, the number of residents with CPS scores 4–6 should be increased such that these three CPS score groups can be analyzed separately. Inclusion of more residents across all CPS scores may reveal improved sensitivity and specificity percentages for the prediction rule among residents with a CPS score of 3 or 4 and suggest possible additional predictors for those scoring 5 or 6.

Second, additional daily care activities and NH residents’ life experiences (i.e., NH staff assistance with dressing, grooming, and eating) should be included in a validation study. Inclusion of diverse daily care activities would increase the applicability of the prediction rule and allow subanalyses across multiple care activities. Differences in accuracy across care activities may be revealed such that residents with CPS scores 0–2 are accurate across all care activities whereas those with CPS scores 3–6 may be capable of accurately reporting the occurrence of some care activities but not others. Third, all residents reporting the occurrence or nonoccurrence of a daily care activity that was not directly verifiable by research staff (i.e., not observed) should enter the second phase of a validation study (i.e., both scenarios three and four in the accuracy validation procedure).

A fourth limitation of the present study was that validation data were not collected across multiple days or trials. The NH residents in the present study were asked questions about the occurrence of daily care activities and their satisfaction with this care only once. There is a chance that some NH residents’ accuracy percentage would increase given repeated exposure to the questions and feedback regarding their accuracy. Our experience suggests that the accuracy rate of NH residents in answering a similar question involved in an incontinence intervention (i.e., Are you wet or dry?) improves with repeated exposure and feedback. Thus, many of the more cognitively impaired residents who were labeled as inaccurate on one trial may in fact prove to be accurate if tested multiple times. Equally important, multiple trials would also allow an assessment of the stability of those residents labeled as accurate.

The final limitation of the present study relates to the need to analyze other potential predictors in order to improve the sensitivity and specificity of the prediction rule. Only information available through the MDS was utilized in the predictive rule because it was the authors’ intent to develop a rule based on data available in all nursing homes. Its availability in all NHs makes the MDS a more attractive data source than alternative sources that might provide more precise resident data but that would also be expensive and difficult to acquire across NHs. If a predictive rule based on MDS information could be established to evaluate resident accuracy, then this rule could be utilized in all NHs with minimal additional effort. However, there may be other brief cognitive screens (e.g., MMSE) that would be easy to administer and that may improve the prediction rule. It is notable that the MMSE was significantly correlated with the validation interview score for the small subgroup of 37 residents. Because the MMSE was not administered to the entire validation sample, the score was not included in the predictive analysis. The five-question behavioral screen (SIS) utilized in the present study was also correlated with the validation interview score but was not a significant predictor of accuracy.

Identifying NH residents who are capable of accurately reporting the occurrence or nonoccurrence of specific daily care activities is an important step toward measuring NH residents’ satisfaction with care and improving the quality of care. An objective predictive rule that identifies residents appropriate for satisfaction interviews will increase the probability that the satisfaction data estimate a wider cross-section of residents’ perceived quality of life and care in the NH than would be the case when only cognitively intact residents are interviewed. In addition to describing the satisfaction of residents with NH life and care there is also potential for this objective predictive rule to be used as a tool for empowering residents and family members and maintaining effective interventions. If NH residents capable of accurately reporting the occurrence or nonoccurrence of daily care activities can be identified, it may be useful for family members, NH staff supervisors, or survey team members to ask those residents whether certain aspects of care were provided. This information could then be used to give feedback to NH staff. Using resident report to structure purposeful communication among residents, family members, and staff gives residents and family members an active role in improving the quality of NH care. For example, it has been reported in previous studies that one of the difficulties in maintaining incontinence inter-
ventions is the lack of feedback from residents and family members concerning the value attributed to this care activity (Schnelle, McNees, Crooks, & Ouslander, 1995). If residents capable of accurately reporting daily incontinence care activities could be identified, then they could be asked if the incontinence care activities were provided by the staff. This information could then be utilized to provide feedback to the staff. Families could play an important advocacy role in relaying this information to NH staff in this feedback system.

References

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