Use of Standardized Activities of Daily Living Rating Scales in Spinal Cord Injury and Disease Services

Anne H. Watson, Elizabeth M. Kanny, David M. White, Denis K. Anson

Key Words: activities of daily living evaluation • spinal cord injuries

Objective. Although standardized activities of daily living (ADL) rating scales offer advantages in reliability and consistency of reporting, the literature has revealed that most occupational therapists tend to use informal assessments and reporting methods. This study investigated the use of standardized ADL rating scales by occupational therapists who treat patients with spinal cord injury and disease (SCI/D).

Method. Fifty-two SCI/D rehabilitation sites were selected by stratified random sampling, and surveys were completed by the occupational therapist in each site who worked most extensively with patients with SCI/D. Occupational therapists at 49 of the sites completed the survey.

Results. Survey results indicated that 68% of the respondents tend not to use standardized ADL rating scales in their work with SCI/D patients. Of those who used standardized ADL rating scales, the Functional Independence Measure (FIM) was more widely used than any other. Most respondents learned about this measure on the job. Many of the respondents indicated that a limitation of the FIM was its inability to detect progress in their patients with SCI/D.

Discussion. The results indicate that although widely used, the FIM may need to be supplemented by other standardized ADL rating scales in order for a therapist to objectively document the progress made by patients with SCI/D. To be able to choose the most appropriate assessment tools, students and practicing therapists need to be educated in a variety of standardized ADL rating scales.

Assessment of patient functioning is critical to planning and executing interventions in occupational therapy practice. Occupational therapists may gather assessment information in a number of ways, including skilled observations, standardized tests, and interviews with the patient, family, and caregivers (Fisher & Short-DeGraff, 1993). Each of these methods has particular strengths and weaknesses, and occupational therapists may use all three during the patient evaluation process. For obtaining objective information about a patient's level of ability regarding specific tasks, standardized measurement tools are most useful (Fisher & Short-DeGraff, 1993). Standardized activities of daily living (ADL) rating scales use objective definitions of levels of performance for specific tasks and provide a means for repeatable and comparable patient evaluations between therapists.

Standardized ADL rating scales are particularly useful for assessing patients with spinal cord injury and disease (SCI/D). SCI/D patients typically require a lengthy inpatient rehabilitation period followed by years of outpatient care from multiple caregivers and health care providers (Bloch & Basbaum, 1986). Objective information obtained from standardized ADL rating scales has been.
shown to be highly useful in predicting long-term caregiver needs (Granger, Cotter, Hamilton, Fiedler, & Hens, 1990; Klein & Bell, 1982), facilitating communication among health care professionals (Law & Letts, 1989), comparing the efficacy of different rehabilitation treatments (Barrer & Nouri, 1989), documenting gains made in clinical treatment, providing quantitative research data, and justifying cost reimbursement for services (Gillette, 1991).

Despite the benefits that might be achieved by using standardized ADL rating scales with SCI/D patients, a review of the literature suggests that many occupational therapists who work with this population rely instead on nonstandardized assessments such as their own checklists and notes (Ainsley, Voorhees, & Drake, 1985; Rogers & Figone, 1980). The purpose of this study was to investigate the actual use of standardized ADL rating scales among occupational therapists who work with patients with SCI/D. Before this study, no such investigations had been conducted. In addition to assessing the use of these instruments in the workplace, we wanted to investigate occupational therapists’ reasons for using and not using these instruments and their exposure to and training with these instruments.

Method

Subjects

The subjects were registered occupational therapists working in facilities selected from the Spinal Cord Injury Services of the Medical and Health Information Directory (Backus, Furtaw, & Marrero, 1991) and the members of the National Institute of Disability and Rehabilitation Research Model Spinal Cord Injury System (Apple & Hudson, 1990) from the 105 facilities in these two sources, 52 facilities were selected by stratified random sampling based on the survey instrument was pretested for ease of administration and face validity of items by five occupational therapists whose caseloads included a large number of patients with SCI/D.

Questionnaire

A 10-page, 58-item questionnaire was designed for this study to assess respondents’ use of standardized ADL rating scales in SCI/D services, reasons for nonuse, training with these instruments, and background information regarding their demographic characteristics. In addition to assessing the general usage of standardized ADL rating scales, the questionnaire focused on the respondents’ use of four specific instruments and on their perceptions of the strengths and weaknesses of each of the four. These instruments were the Barthel Index (Mahoney & Barthel, 1965), the Functional Independence Measure (FIM) (Granger, Hamilton, & Sherwin, 1990), the Klein-Bell ADL Scale (Klein & Bell, 1979), and the Quadriplegic Index of Function (Gresham et al., 1986). These instruments were selected for the study because of their general acceptance within the field of occupational therapy (Christiansen, 1991; Hopkins & Smith, 1988; Pedretti & Zoltan, 1990; Trombly, 1989) and because of their appropriateness for use with patients with SCI/D. The questionnaire also was designed to encourage respondents to provide information regarding their use of other standardized instruments in treating this patient population. Before the questionnaire was mailed to the 52 facilities, the survey instrument was pretested for ease of administration and face validity of items by five occupational therapists whose caseloads included a large number of patients with SCI/D.

Results

Use and Ratings of Standardized ADL Rating Scales

Of the four ADL rating scales listed by name on the survey questionnaire, the respondents reported that they used the FIM with SCI/D patients more often than they used any other standardized ADL rating scale. Thirty-four (72%) of the 47 respondents reported that they used the FIM in their practice. Few respondents reported the use of the Klein-Bell Scale, Quadriplegic Index of Function, Barthel Index, or any other standardized ADL rating scale in their practices (see Table 1).

Subjects were asked to rate the different standardized ADL rating scales according to six characteristics. However, because so few respondents used measures other than the FIM, it was not possible to use these ratings for a meaningful comparison of the measures. Therefore, only the ratings of the FIM characteristics are presented (see Table 2). Ratings were based on a Likert-
The FIM was rated as Good or Very Good by 42% (0-50%) of the respondents on the other five characteristics, including brevity of time required to administer and score (mode = 5). The FIM was most frequently cited positively on the brevity of time required to administer and score the test; 65% of these ratings were Good or Very Good. The FIM was rated as Good or Very Good by 42% to 50% of the respondents on the other five characteristics, which included clarity of administration and scoring directions, providing information for treatment planning, detecting patient progress, planning for attendant care, and promoting staff communication. The modal score for all characteristics was 4 on the rating scale, with the exception of detecting patient progress (mode = 3).

Reasons for Not Using Standardized ADL Rating Scales

Thirty-two of the 47 respondents (68%) reported that they tend not to use standardized ADL rating scales in their practices. (Included in this group were 20 respondents who reported some usage of the FIM in their clinical work.) These 32 respondents were asked to complete a section of the questionnaire in which they selected their three primary reasons for not using these standardized scales from a list of eight reasons commonly cited by occupational therapists. The most frequently cited reason for not using a standardized ADL rating scale, cited by 22 (69%) of respondents, was that the checklists and narrative notes that they used provided the information that they needed. Fourteen (44%) cited lack of familiarity with standardized ADL rating scales, and 12 (38%) believed that the current ADL rating scales lacked sensitivity in detecting progress made by patients with SCI/D.

Education and Practice With Standardized ADL Rating Scales

Two types of educational exposure to standardized ADL rating scales were assessed: reading or verbal instruction and actual practice with the instruments. The most common site for learning about standardized ADL rating scales was on the job. Forty-one respondents (87%) reported that they received instruction in ADL rating scales (either by reading or verbal instruction) at the work site, and 38 (81%) reported actual supervised practice with one standardized ADL assessment tool while at work (see Table 3).

More respondents reported that, while on the job, they received more instruction and practice in the use of the FIM than in the use of any other standardized ADL assessment. Thirty-six (77%) of the respondents reported reading about or receiving verbal instruction about the FIM on the job, and 33 (70%) had an opportunity to practice with this measure on the job. Instruction in the

Table 1
Reported Use of Standardized Activities of Daily Living (ADL) Rating Scales (N=47)

<table>
<thead>
<tr>
<th>ADL Scale</th>
<th>Respondent Use</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Functional Independence Measure</td>
<td>34</td>
<td>72.3</td>
</tr>
<tr>
<td>Klein-Bell ADL Scale</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Quadriplegic Index of Function</td>
<td>1</td>
<td>2.1</td>
</tr>
<tr>
<td>Barthel Index</td>
<td>2</td>
<td>4.3</td>
</tr>
<tr>
<td>Other</td>
<td>5</td>
<td>10.6</td>
</tr>
<tr>
<td>Nonstandardized</td>
<td>11</td>
<td>23.4</td>
</tr>
</tbody>
</table>

Note: Some therapists reported using more than one assessment instrument.

Table 2
Ratings of Functional Independence Measure (FIM) Characteristics (N=36)

<table>
<thead>
<tr>
<th>Characteristics of FIM</th>
<th>M (SD)</th>
<th>Percentage Frequency/ Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rate of time to administer and score</td>
<td>3.73 (.93)</td>
<td>1 = 2.7</td>
</tr>
<tr>
<td>Clarity of administration and scoring directions</td>
<td>3.60 (.80)</td>
<td>1 = 0.0</td>
</tr>
<tr>
<td>Providing information for treatment planning</td>
<td>3.40 (1.00)</td>
<td>1 = 0.0</td>
</tr>
<tr>
<td>Detecting patient progress</td>
<td>3.38 (1.00)</td>
<td>1 = 2.7</td>
</tr>
<tr>
<td>Planning for attendant care needs</td>
<td>3.57 (.92)</td>
<td>1 = 5.5</td>
</tr>
<tr>
<td>Promoting staff communication</td>
<td>3.10 (.99)</td>
<td>1 = 5.5</td>
</tr>
</tbody>
</table>

*Ratings: 1 = Very Poor; 2 = Poor; 3 = Fair; 4 = Good; 5 = Very Good.

Table 3
Educational Exposure to Standardized ADL Rating Scales by Type of Learning (N=47)

<table>
<thead>
<tr>
<th>Site of Instruction</th>
<th>Type of Learning</th>
<th>Reading/Verbal Instruction</th>
<th>Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>On the job</td>
<td>Reading/Verbal Instruction</td>
<td>41 (87.2%)</td>
<td>38 (80.9%)</td>
</tr>
<tr>
<td>Fieldwork</td>
<td>Reading/Verbal Instruction</td>
<td>16 (34.0%)</td>
<td>15 (31.9%)</td>
</tr>
<tr>
<td>Classroom</td>
<td>Reading/Verbal Instruction</td>
<td>15 (31.9%)</td>
<td>5 (10.6%)</td>
</tr>
<tr>
<td>Workshop/Conference</td>
<td>Reading/Verbal Instruction</td>
<td>10 (21.3%)</td>
<td>1 (2.1%)</td>
</tr>
<tr>
<td>Self-taught</td>
<td>Reading/Verbal Instruction</td>
<td>9 (19.1%)</td>
<td>8 (17.0%)</td>
</tr>
</tbody>
</table>

Note: ADL = Activities of daily living.
use of the Barthel Index, Klein-Bell ADL Scale, and Quadriplegic Index of Function were reported infrequently (see Table 4).

Respondents reported that they received little exposure to the FIM within the classroom of their academic institutions. Seven respondents (15%) reported classroom instruction in use of the Barthel Index and another seven (15%) reported such instruction in the use of the Klein-Bell ADL Scale. Only one of the respondents (2%) had received classroom instruction in the Quadriplegic Index of Function.

**Therapist Characteristics and Use of Standardized ADL Rating Scales**

Data were examined to determine whether there were differences in ratings of the FIM or use of standardized ADL rating scales among the respondents that were correlated with differences in their educational backgrounds or job descriptions. No significant differences were found in FIM ratings or other ADL rating scales based on these criteria. The survey data indicated that those respondents who treated a higher percentage of SCI/D patients in their clinical practice were more inclined to rate the FIM as less effective for detecting patient progress; however, this trend was not statistically significant.

**Discussion**

Among the occupational therapists surveyed, the FIM was used more often than any other standardized ADL rating scale. Few of the respondents used other standardized rating scales in their clinical practices with SCI/D patients. The finding that most respondents had been exposed to the FIM on the job rather than during their student course work or fieldwork training is not surprising given that the FIM was published in 1986 and the majority of the sample group had completed occupational therapy education before that time. During their student years, a small number of the respondents had received instruction in some of the older standardized ADL instruments, such as the Barthel Index and Klein-Bell ADL Scale. Overall, the majority of respondents reported that they had no instruction in or practice with standardized ADL assessments during their academic and fieldwork training. This finding again is probably due to the time at which the majority of the respondents were educated in occupational therapy, and it would be anticipated that all curricula and fieldwork training centers currently include the teaching of standardized ADL assessments (AOTA, 1991).

Although most respondents reported some usage of the FIM in their work with SCI/D patients, many of them reported that they tend not to use standardized ADL rating scales. Results of this study may have important implications with respect to the use of standardized ADL rating scales in the general practice of occupational therapy. The American Occupational Therapy Foundation (AOTF) has adopted the development and standardization of instruments for clinical practice and research as one of its six research priorities (AOTF, 1990). In addition, the U.S. health care system is undergoing reform, and there is increasing pressure to demonstrate efficacy of treatment that involves standardized measures. Occupational therapists may be required to use standardized ADL instruments in their clinical practice to demonstrate quality assurance and provide outcome data for reimbursement. However, our data suggest that therapists may not find these instruments to be useful. If practicing occupational therapists do not value the information gathered from standardized ADL scales, it is unlikely that they will use such instruments to provide useful research data or beneficial information for justifying the cost of occupational therapy services.

In developing and using standardized ADL rating scales, it is important that such measures not be perceived as burdensome to occupational therapists but, instead, be genuinely useful in planning for patients’ treatment needs. Trombly (1995) recommended that the patient be fully involved in the assessment process to determine “the person's view of his or her occupational functioning and what he or she views as dysfunctional in his or her life” (p. 256). Such an approach to assessment would allow the therapist and patient to work together toward a shared goal, and the patient would be less likely to view treatment as simply complying with the therapist's demands. Further, Trombly recommended that occupational therapy not confine itself to only one evaluation tool (because this would not meet the needs of all patients) and that assessment allow either for restoration or adaptation of functioning as goals of treatment. Fisher and Short-DeGraff (1993) argued that it is necessary for occupational therapists to have assessment tools that allow the therapist and patient to consider the context in which functioning occurs. Such tools would increase the scope of the occupational intervention as well as the likelihood that patients will act in ways that further functional gains outside of the hospital clinic. In considering contextual issues of functioning, practical considerations—such as time and energy expenditure—become part of using

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Table 4

<table>
<thead>
<tr>
<th>Standardized ADL Scale</th>
<th>On-the-Job Learning</th>
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<tbody>
<tr>
<td></td>
<td>Reading/Verbal Instruction (%)</td>
<td>Practice (%)</td>
</tr>
<tr>
<td>Functional Independence Measure</td>
<td>36 (70.6)</td>
<td>35 (70.2)</td>
</tr>
<tr>
<td>Barthel Index</td>
<td>7 (14.9)</td>
<td>6 (12.8)</td>
</tr>
<tr>
<td>Quadriplegic Index of Function</td>
<td>2 (4.3)</td>
<td>2 (4.3)</td>
</tr>
<tr>
<td>Klein-Bell ADL Scale</td>
<td>2 (4.3)</td>
<td>1 (2.1)</td>
</tr>
<tr>
<td>Other</td>
<td>2 (4.3)</td>
<td>2 (4.3)</td>
</tr>
</tbody>
</table>

Note: ADL = Activities of daily living.
an assessment tool.

A study by Weingarden and Martin (1989) exemplifies the need for shared goals in ADL assessment and intervention as well as the need for contextual considerations. They studied 10 persons with C-6-level tetraplegia who were capable of self-dressing at the time of their discharge from in-hospital rehabilitation. When these persons were evaluated at home, 2 to 6 years after their injury, all were capable of dressing themselves within 20 to 60 min. However, none routinely did so, stating that such efforts took too much time and energy. The issue of whether or not self-dressing was a practical or valued activity was not assessed during the in-hospital rehabilitation, although much time was devoted to mastering this activity in their occupational therapy programs.

In this era of health care reform, which demands outcome data and pushes for cost-effective outpatient treatment, occupational therapists need to assess functioning in ways that reflect the patients' values, the home environment, and the long-term benefits of therapy over time. Standardized assessment instruments that are helpful to occupational therapists in conceptualizing these needs will prove useful, whereas measures that simply rate the patient's ability to produce discrete behaviors while an inpatient will be viewed as just more paperwork.

Data from our survey suggest not only that practicing occupational therapists question the value of current standardized ADL assessments with SCI/D patients, but also that most of them received little exposure to such instruments during their academic and fieldwork training. For occupational therapists to increase the use of standardized ADL instruments, one of the profession's stated goals (AOTF, 1990), it is important that practicing occupational therapists have the opportunity to learn about these measures during their continuing education. It is also important that educators and clinical supervisors provide such an opportunity to students during their school years. In addition, it is clear that occupational therapists who are out of school can still receive on-the-job exposure. Among our sample of respondents, most reported being exposed to the FIM at their work site. Therefore, as a profession, occupational therapy should focus efforts in training in the use of standardized ADL rating scales at both occupational therapy students and practicing therapists.

We recommend that occupational therapists be trained in the use of several standardized ADL rating scales to complement their other assessment skills (e.g., interviewing). If occupational therapists are familiar with more than one standardized ADL rating scale, they will be more likely to choose appropriate instruments for individual patients. If occupational therapists sense that they are capable of choosing an instrument that will be highly effective in showing the success of their treatment efforts, they are more likely to have an interest in using such an instrument. Education about ongoing developments in the field of standardized ADL rating scales is a necessary step toward this goal.

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