INSTRUMENTS FOR THE FUNCTIONAL ASSESSMENT OF OLDER PATIENTS

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COMPREHENSIVE functional assessment of elderly patients in clinical settings is becoming essential for optimal clinical management. Frail elderly patients present with multiple interrelated problems, some of which often go undetected. Comprehensive assessment cuts across disease categories, addressing physical, cognitive, emotional, and social function.

Many of these problems can be detected by thorough history-taking and physical examination. Others, however, may fall outside the traditional clinical evaluation and therefore receive little attention from physicians. Recent studies have underscored the importance of focusing on functional status in assessing patients and predicting outcomes, and structured assessments can easily complement the standard clinical evaluation. The instruments used to make such assessments differ in their validity, reliability, and usefulness in various clinical settings. This article will discuss the use of such instruments in the assessment of physical, cognitive, and emotional function.

INDICATIONS FOR THE USE OF AN ASSESSMENT INSTRUMENT

Clinicians should have a specific goal or rationale in mind before they choose an assessment instrument. As with the use of clinical laboratory tests, unless a clinician can clearly define the information needed and how it might affect clinical decisions, it is usually wiser not to use an assessment instrument at all. The most common goals for their use in clinical and rehabilitation medicine include establishing a baseline description, screening for risk factors or undetected problems, assisting in diagnosis, setting rehabilitation or therapeutic goals, and monitoring the patient’s clinical course.

The use of assessment instruments for description or screening may be the most broadly applicable, particularly in the care of older patients who are frail or have a number of coexisting conditions. Studies in outpatient, inpatient, rehabilitation, and long-term care settings have found that structured functional-assessment instruments can detect impairments in physical function, mental status, emotional status, vision, gait, and continence that have not been detected by standard clinical examinations. Although some instruments have been designed to establish or assist in establishing a diagnosis, most diagnostic instruments lack the precision, sensitivity, and specificity of the majority of refined clinical laboratory tests. Therefore, such instruments are usually more helpful in the collection of data before a diagnosis is made, leaving the final decision to clinical judgment.

In clinical, rehabilitational, and long-term care settings, assessment instruments are commonly used to set rehabilitational and therapeutic goals and to monitor the clinical course. Although functional status is an important variable in decisions regarding discharge status and long-term care, recent work by Elam and colleagues demonstrates that clinicians are not good at predicting a patient’s function and that a formal assessment can increase their knowledge of the patient’s disability. Also, the scores from standard assessment instruments provide a more objective means of following the clinical progress of a patient who is delirious, depressed, or disabled. Such data can often be collected by nurses or therapists and charted on a flowchart for ease of use and comparison.

EVALUATING AN ASSESSMENT INSTRUMENT

Although it is beyond the scope of this article to describe in depth the major scientific issues related to the use of assessment instruments, there are some basic principles clinicians should bear in mind. First, the scientific literature should indicate that the assessment instrument chosen is a valid measure of the function being tested. Just as clinicians would want to evaluate the accuracy of a new enzymatic assay purporting to detect the presence or absence of myocardial infarction, so too would they want to know whether indexes of physical, cognitive, and emotional function accurately measure such functions.

Second, studies should indicate whether the assessment instrument has adequate interrater and test-retest reliability. Interrater reliability refers to tests administered by different interviewers and is a measure of their ability to obtain the same result at the same time. Test–retest reliability is a measure of the ability of the instrument to yield the same result for a single patient on two separate assessments, which are usually closely spaced so that any variation is due to the reliability of the instrument rather than to changes in the patient’s status. Since many assessment instruments will be used repeatedly to monitor the clinical
well validated, are administered by an interviewer, and can be used to assess broad areas of potential concern, and some contain subscales that can be used separately for specific purposes. On the other hand, many take a long time to administer, collect more information than is needed, and require substantial training of those who administer them to ensure reliability. In clinical settings in which assessment instruments are often used for very specific purposes and patients and conditions are heterogeneous, these large, multifaceted instruments often prove too cumbersome and require excessive data collection. Clinicians may prefer to choose less time-consuming instruments that are more focused and that fulfill a defined need in one of the areas described in the next section.

**CLINICAL USES OF ASSESSMENT INSTRUMENTS**

**Physical Function**

Recent studies have documented that functional disability is very common among elderly patients in a variety of clinical settings. Although ADL has at times been used as a synonym for physical function or performance, ADL scales actually assess the basic capacity of persons to care for themselves and hence represent a narrow range of performance. ADL scales are usually arranged hierarchically from the most basic of human functions (using the toilet and eating) to somewhat higher functions (dressing and walking). As shown in Table 1, a variety of validated and reliable scales of physical function are now available that vary in simplicity (and sensitivity to clinical change), from the basic ADL index of Katz et al. to the more comprehensive Framingham Disability Scale. Some of these scales can be self-administered, but others require an interviewer to make a judgment or to observe the patient’s performance (Table 1). These assessment instruments are most widely used to provide a base-line description, screen for risk factors, and monitor the patient’s clinical course. Standard ADL scales are often most useful in describing base-line function and setting goals for patients who have a high degree of impairment, especially in rehabilitative settings. They are also useful in defining a patient’s need for regular daily assistance with basic functions, whether he or she is living at home or in an institution.

Instrumental ADL scales can be used to assess somewhat higher levels of performance, such as the patient’s ability to perform household chores or go shopping. Instrumental ADL scales may be rated by either the interviewer or the patient, but they usually rely on judgments rather than assessments of actual performance. The advantage of standard ADL and instrumental ADL scales is that when combined, they assess the range of basic activities most critical for a patient to remain in a community setting. However, because both standard and instrumental ADL scales are usually coarsely graded, they are often insensitive to subtle but potentially important changes.

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Function Assessed</th>
<th>Range or Sensitivity</th>
<th>Administration</th>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Katz ADL scale</td>
<td>Basic self-care</td>
<td>Limited to basic activities; not sensitive to small changes1</td>
<td>By patient or interviewer; based on judgment2</td>
<td>Simple assessment of basic skills; useful in rehabilitative setting</td>
<td>Limited range of activities assessed; ratings subjective4</td>
</tr>
<tr>
<td>Barthe scale</td>
<td>Self-care and ambulation</td>
<td>Slightly broader range than Katz ADL scale; includes stair climbing, wheelchair use</td>
<td>By interviewer; based on judgment or observation5</td>
<td>Range of activities useful in rehabilitative setting</td>
<td>Range not useful for small impairments; ratings subjective6</td>
</tr>
<tr>
<td>Kenny Self-Care scale</td>
<td>Self-care and ambulation</td>
<td>Similar to Barthe index</td>
<td>By interviewer; based on judgment or observation</td>
<td>Range useful in rehabilitative setting</td>
<td>Range narrow for small impairments; ratings subjective7</td>
</tr>
<tr>
<td>Instrumental ADL scale</td>
<td>More complex activities: food preparation, shopping, housekeeping</td>
<td>Higher range of performance than Katz ADL scale; not sensitive to small changes1</td>
<td>By interviewer or patient; based on judgment1</td>
<td>Assesses functions important for independent living</td>
<td>Ratings subjective8,9</td>
</tr>
<tr>
<td>Timed manual performance</td>
<td>Timed assessment of performance of structured manual tasks</td>
<td>Broad range, from signing name to lifting objects</td>
<td>By interviewer; based on observation; requires special props</td>
<td>Assesses actual performance; sensitive to small changes</td>
<td>Difficult to use in patients who are seriously ill or cognitively impaired</td>
</tr>
<tr>
<td>Performance test of ADL</td>
<td>Self-care, mobility, and transfers</td>
<td>Ranges from ADL and instrumental ADL to mobility and transfers</td>
<td>By professional or trained interviewer; requires observation of patient performing specific activities; requires props</td>
<td>Direct observation of range of functions; useful in variety of clinical settings</td>
<td>Time consuming; difficult to use in seriously ill patients</td>
</tr>
<tr>
<td>Framingham Disability scale</td>
<td>Self-care and physical activities</td>
<td>Broad range of activities, from self-care to lifting objects; not sensitive to small changes1</td>
<td>By interviewer</td>
<td>Assesses broad range of activities; detects persons with less serious disabilities</td>
<td>Complex scoring; summary scores may hide important problems observed in individual tasks</td>
</tr>
</tbody>
</table>

*All these instruments can be used to establish a base-line description, screen for risk factors or undetected problems, set rehabilitative goals, and monitor progress.*
Table 2. Instruments Used to Assess Cognitive Function.

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Function Assessed</th>
<th>Range or Sensitivity</th>
<th>Administration</th>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short Portable Mental Status Questionnaire*</td>
<td>Memory, attention, orientation*</td>
<td>Basic 10-item questionnaire, only capable of detecting gross cognitive dysfunction</td>
<td>By interviewer</td>
<td>Quick screen of basic function</td>
<td>Insensitive to small changes†</td>
</tr>
<tr>
<td>Folstein Mini-Mental State Examination†</td>
<td>Memory, orientation, attention, constructive ability*</td>
<td>Fairly broad range; will detect moderate but not mild or subtle impairment</td>
<td>By interviewer</td>
<td>Fairly quick and sensitive‡</td>
<td>Will not detect mild disability</td>
</tr>
<tr>
<td>Wechsler Memory scale‡</td>
<td>Broader categories of memory*</td>
<td>In-depth assessment of fairly broad range of memory functions; more sensitive to subtle changes</td>
<td>By interviewer</td>
<td>In-depth assessment of memory</td>
<td>Takes a long time to administer; inadequate norms for older persons§</td>
</tr>
<tr>
<td>Dementia Rating scale‡</td>
<td>Memory and behavior*</td>
<td>Broad range of functions, including ability to manage money and find way indoors and outside</td>
<td>By interviewer to informant</td>
<td>Practical; range is clinically useful</td>
<td>Quality of information dependent on informant¶</td>
</tr>
<tr>
<td>Short Care scale§,¶</td>
<td>Cognitive impairment††</td>
<td>Short multicomponent instrument; includes questions on basic mental status</td>
<td>By interviewer</td>
<td>Most useful as combined short screen of physical, emotional, and cognitive function</td>
<td>Scoring requires training, diagnostic index for dementia of doubtful validity†</td>
</tr>
<tr>
<td>CERAD battery of tests‡</td>
<td>Dementia††</td>
<td>Broad range of functions: memory, praxis, language; may be sensitive to disease progression</td>
<td>By interviewer</td>
<td>Assesses a number of functions often impaired in dementia; associated structured clinical evaluation available</td>
<td>Validity and reliability still being tested; requires training</td>
</tr>
</tbody>
</table>

*This instrument can be used to establish a baseline description, screen for risk factors or undetected problems, and monitor progress.
†This instrument can be used to assist in diagnosis.

ally high. Recent studies indicate that patients who are depressed are at increased risk for dementia. The use of standardized instruments that screen for symptoms of depression helps to identify such potential problems.

The characteristics of several of these instruments are summarized in Table 3. Most of the scales listed are reasonably valid, reliable, and useful for screening and providing a quantitative assessment of the effects of therapy. Most have difficulty differentiating the effects of physical illness from those of depression, since most include a number of questions about somatic symptoms (e.g., fatigue and pain). Although some scales, such as the Short Care scale, provide cutoff points intended to help establish a clinical diagnosis of depression, the validity of these instruments in making a diagnosis is not sufficiently high to warrant basing the final diagnosis on their results alone. Also, since many of these instruments depend on information acquired in interviews, their usefulness may be limited in patients who have serious cognitive impairment or who are uncooperative. The Cornell scale can be used to identify symptoms of depression in patients with or without dementia. However, it requires a separate interview of both the care giver and the patient by a trained, skilled interviewer who can make judgments about the patient’s behavior. Despite some limitations, scales that rate the level of depression aid in diagnosis and call attention to the existence of symptoms of depression.

Social Activities and Support

Elderly persons who are socially well integrated into their communities have improved rates of long-term survival and may have an increased capacity to recover from disease. Social isolation is a definite risk factor for mortality and morbidity. Frail elderly persons with serious disease or disability usually need a support system to remain in the community. Unfortunately, clinicians treating older persons who are ill or disabled often ignore this critical variable and hence do not develop a plan of continuing care that will allow their patients an optimal level of continued integration in the community.

Screening instruments that assess social activities and potential support systems can be particularly useful in the treatment of frail older persons. Recent reviews provide a comprehensive overview of the instruments that assess social support.

Incorporating Assessment Instruments into Practice

With a small investment of time and effort, clinicians can easily incorporate some of the basic assessment instruments into practice in the office, hospital, or nursing home. A comprehensive evaluation,


