

Selecting a Fatigue Rating Scale

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Measuring changes in patient fatigue levels is essential to the proper treatment and research of chronic fatigue syndrome (CFS). However, the term “fatigue” continues to elude precise definition or objective measurement in the research literature. Because of this, the patient’s reported perception of his or her fatigue has become the focus of fatigue measures.

There remains no “gold standard” of fatigue severity available to validate fatigue scales, nor can these measures distinguish fatigue related to physical exertion, emotional stress, pain, sleep disturbance, depression or the poorly understood causal mechanisms of CFS. Fortunately, recently developed measures of subjectively experienced fatigue, modeled after the measurement of other subjective states (e.g., pain, anxiety), have multiple applications in clinical and research settings. Based on a previous review of fatigue instruments¹ as well as more recent data, this article describes selected fatigue measures for two categories of fatigue scales (fatigue intensity and fatigue/function), and concludes with recommendations about the use of fatigue scales by clinicians and researchers.

Measures of fatigue have one of the following response formats: verbal ratings, visual analogue or numerical ratings. (Because the visual analogue scale is rarely used and presents some difficulties, we will not discuss it.) A verbal rating scale is a list of adjectives that describes different levels of fatigue intensity, such as mild and moderate. The verbal rating scale is easy to administer and score, easy for the respondent to comprehend, and compliance is good.

Alternatively, the numerical rating scale instructs the patient to provide a single rating of his/her fatigue-related problem on a 0-to-10 or a 0-to-100 scale. The 0 point indicates no fatigue-related problem and the 10 or 100 point indicates a fatigue-related problem as bad as it could be. The number chosen by the patient signifies the severity of the fatigue-related problem for the patient. Numerical rating scales of fatigue are extremely easy to administer and score and have shown sensitivity to treatment effects in CFS.

Fatigue Intensity Scales

Selecting a fatigue intensity scale may become a matter of the practical issues of patient comprehension and ease of administration and scoring.

The Fatigue Scale is a 14-item verbal rating measure of fatigue intensity² with a four-choice response format that was developed with a sample of 374 general medical outpatients. The scale showed strong internal consistency and factor analysis yielded two dimensions, physical and mental fatigue. Physical fatigue refers to items such as “I get tired easily,” “I can no longer start anything” and “I feel weak,” while mental fatigue encompassed difficulties with concentration and memory. The Fatigue Scale has also shown sensitivity to treatment changes.

The limitations of the Fatigue Scale include its inability to distinguish between CFS and primary depression patients, an important diagnostic issue in CFS. In addition, a second factor analytic study of the Fatigue Scale in CFS patients³ calls into question the stability of the factor structure of the scale.

The Energy/Fatigue Scale is another verbal rating scale of fatigue intensity.⁴ It consists of five questions with a five-choice response format containing adjectives describing both fatigue (worn out, tired) and energy (pep, energy). It was derived from the Rand Vitality Index and was given to 2,389 adults visiting ambulatory medical clinics. The measure showed good internal consistency.⁴ The brevity of the Energy/Fatigue Scale may result in scores that do not fully reflect the severity of

illnesses such as CFS. No published study has specifically tested the psychometric properties of the Energy/Fatigue Scale in CFS.

Fatigue/Function Measures

Fatigue/function scales quantify the linkage between fatigue intensity and functional limitations. Clearly, two patients with similar levels of fatigue severity in CFS may show widely divergent levels of incapacity. Conversely, two patients with similar functional limitations may show substantially different levels of fatigue severity.

The Fatigue Severity Scale is composed of nine items with a seven-point response format.⁵ Sample questions include “I am easily fatigued” and “Exercise brings on my fatigue.” In the initial validation study, internal consistency for the Fatigue Severity Scale was high for specific illness groups (MS and lupus) and healthy controls. The scale clearly distinguished patients from controls and it was moderately correlated with a single-item visual analogue scale of fatigue intensity. In all patients, clinical improvement in fatigue was associated with reductions in scores on the Fatigue Severity Scale.

In a recent study⁶ that compared the Fatigue Severity Scale to the Fatigue Scale, both were found to be useful measures of fatigue-related symptomatology within a general population of individuals with varying levels of fatigue. However, the Fatigue Severity Scale appeared to represent a more accurate and comprehensive measure of fatigue severity and functional disability for individuals with CFS-like symptomatology.

The Fatigue Severity Scale is also a practical measure due to its brevity and ease of administration and scoring. On the other hand, a ceiling effect in the Fatigue Severity Scale may limit its utility to assess severe fatigue-related disability. Therefore, the true association between the Fatigue Severity Scale and other health-related measures may be underestimated.

The Checklist Individual Strength (CIS) is a 20-item self-report questionnaire^{7,8} that captures four dimensions of fatigue, including subjective experience of fatigue, reduction in motivation, reduction in activity and reduction in concentration. Respondents rate the extent to which each statement is true for them in the past two weeks on a seven-point Likert scale ranging from 1 = “Yes, that is true” to 7 = “No, that is not true.”

The CIS has demonstrated satisfactory psychometric properties, including high internal consistency and the ability to discriminate healthy individuals, patients with CFS and patients with multiple sclerosis.⁹ Finally, the CIS has shown sensitivity to treatment intervention in a randomized clinical trial of cognitive behavioral intervention for patients with CFS.¹⁰ However, the dimensions of the CIS, which may well characterize clinical depression as well as CFS, have not been tested within a primary depression population. Thus it is unknown if the CIS can differentiate the two disorders.

Is Fatigue Qualitatively Different in CFS?

The above fatigue scales have confirmed that subjectively rated fatigue severity is often higher in CFS than in other fatiguing illnesses. However, severity measures do not address qualitative aspects of the fatigue experience. CFS patients often describe unusual fatigue sensations that, according to a descriptive study of 313 CFS patients,¹¹ may be useful in diagnosing the illness.

The 19-item, self-report *Fatigue Qualities Scale* contains descriptions of fatigue symptoms commonly found in a variety of medical conditions that may be associated with CFS, including subclinical hypothyroidism, glycogen storage disease and mitochondrial dysfunction. Sample items include: “My arms feel ‘heavy’ and ‘dead’ when I’m not moving them,” “Climbing stairs feels like swimming against a strong current of molasses” and “I have to consciously think about a movement and

concentrate before I can complete it.”

A discriminant analysis using Fatigue Qualities Scale scores correctly classified 91–97 percent of self-identified CFS patients and healthy significant others. In comparison, a self-report inventory of CFS symptoms based on the U.S. case definition¹² correctly classified only 67 percent of these patients and 85 percent of healthy significant others. A replication of these findings would be necessary to confirm the potential utility of the Fatigue Qualities Scale in diagnostic evaluations of CFS.

Recommendations

Psychometric considerations would suggest the use of fatigue scales that (1) have been diagnostically validated in CFS and depression samples, (2) assess several factorially distinct dimensions of fatigue and (3) are easy to administer and score. Unfortunately, none of the above measures meet all of these criteria. Based on our own clinical and research experience with fatigue measures, we would recommend for the clinician the Fatigue Severity Scale, which provides a rapid assessment of fatigue-related impairments (see table). For the researcher, the selection of any two fatigue instruments may offer a more thorough description of the fatigue experience and an opportunity for concurrent validation of each scale as well as convergent validation with other measures.

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The Fatigue Severity Scale

The Fatigue Severity Scale can be used to monitor change in fatigue over time or in response to therapeutic interventions. Patients are asked to respond to each statement on a scale of 1 to 7, with 1 indicating “Strongly Disagree” and 7 indicating “Strongly Agree.”

Statements:

1. My motivation is lower when I am fatigued.
 2. Exercise brings on my fatigue.
 3. I am easily fatigued.
 4. Fatigue interferes with my physical functioning.
 5. Fatigue causes frequent problems for me.
 6. My fatigue prevents sustained physical functioning.
 7. Fatigue interferes with carrying out certain duties and responsibilities.
 8. Fatigue is among my three most disabling symptoms.
 9. Fatigue interferes with my work, family or social life.
 10. Score = Sum of responses divided by 9. Higher score indicates higher fatigue levels.
- This scale is reprinted with permission.⁵*

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