Cancer-Related Fatigue: Role of Oncology Nurses in Translating National Comprehensive Cancer Network Assessment Guidelines Into Practice

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This article reviews the National Comprehensive Cancer Network’s (NCCN’s) guidelines for cancer-related fatigue (CRF) assessment and discusses many of the common barriers that hinder the translation of the CRF guidelines into practice settings. Current assessment and measurement scales validated in patients with cancer are highlighted, and case studies reflect the vital roles that oncology nurses can play in managing patients with CRF. Oncology nurses must remember to assess the “gang of 7” (i.e., anemia, pain, sleep difficulties, nutrition issues, deconditioning or changes in activity patterns, emotional distress [depression or anxiety], and presence of comorbidities) that may affect workup, treatment, and supportive care referrals. Teaching patients about the importance of viewing CRF as the “sixth vital sign” can emphasize this symptom’s importance and significance. Oncology nurses also can recognize the many patient-, provider- and system-related barriers that exist and work with others in a systematic and collaborative fashion within the system to decrease these barriers and begin to incorporate a simple intensity scale for CRF assessment and screening, documentation, and ongoing monitoring. By using available resources, oncology nurses can play significant roles in the translation of the NCCN’s evidence-based practice guidelines for CRF in their practice settings.

Despite the availability of the National Comprehensive Cancer Network’s (NCCN’s) evidence-based practice guidelines for the assessment and management of cancer-related fatigue (CRF) (Mock, Abernathy, et al., 2007; Mock, Atkinson, et al., 2007), assessment of CRF still is not performed routinely at many institutions and oncology practice settings (Knowles, Borthwick, McNamara, Miller, & Leggot, 2000). Numerous patient-, provider-, and system-related barriers hinder the translation of these guidelines into practice settings by oncology nurses and other healthcare providers. Oncology nurses can play vital roles in removing these barriers and promoting the translation of the guidelines into practice settings to ensure that CRF is routinely assessed, managed, and documented.

Barriers to the Translation of Guidelines Into Practice

Many barriers that hinder the translation of the NCCN guidelines into practice for the assessment and management of CRF are comparable to patient-, provider-, and system-related barriers to assessing and managing cancer-related pain; inherent similarities exist between these symptoms (National Institutes of Health [NIH], 2002). Each of the barriers is discussed in the following sections.

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Patient-Related Barriers

Patients with cancer often do not initiate discussion with their healthcare providers about their fatigue because they fear they are bothering busy healthcare providers or that they will be perceived as “complainers.” Some patients only volunteer the severity of their fatigue when it becomes overwhelming or limits their functioning and activities of daily living (Borneman et al., 2007). Patients may fear that their medical treatment might be negatively affected if they report fatigue to their healthcare providers or that the fatigue may mean that their disease is not responding to treatment or is getting worse. They also may believe that their fatigue is an inevitable part of dealing with cancer and its therapies and that they just have to learn to live with it because nothing can be done (Borneman et al.; Cella, Peterman, Passik, Jacobsen, & Breitbart, 1998; NIH, 2002).

Provider-Related Barriers

Healthcare providers may not be aware of just how severe or prevalent CRF is in their patients unless patients bring up the subject for discussion. Because CRF is not routinely assessed in many clinical settings (Knowles et al., 2000; Nail, 2002), it goes underreported, underdiagnosed, and undertreated (Mock, Abernathy, et al., 2007). Healthcare providers may believe that CRF is not any different than usual tiredness (Payne, Piper, Rabinowitz, & Zimmerman, 2006; Wu & McSweeney, 2007) and that symptoms other than CRF, such as pain or nausea, may be more important to treat (Vogelzang, Breitbart, & Cella, 1997). Healthcare providers’ own comfort level may play a role in initiating discussion about CRF, particularly if they are unaware that effective CRF treatments exist (Borneman et al., 2007; NIH, 2002). Another barrier to the translation of the guidelines into practice settings may be the perception by healthcare providers that the guidelines are too complex and not feasible to implement in busy practice settings.

System-Related Barriers

In general, symptom assessment and the translation of evidence-based guidelines into practice are relatively recent phenomena in clinical practice. Pain is the only symptom assessed, documented, and managed in clinical settings, and this required a mandate from the Joint Commission to be routinely incorporated into practice (Dahl, 2000). Documentation of CRF in the medical record is not a common practice and is not required by the Joint Commission; therefore, CRF assessment and management are not viewed as practice priorities despite its prevalence (Prue, Rankin, Allen, Gracey, & Cramp, 2006) and providers are not routinely reminded to document its presence, severity, or management (Borneman et al., 2007) as patients transition between clinical settings (i.e., outpatient clinics, office practice, or inpatient settings). Additional barriers include the time it may take to obtain a physician’s order for CRF supportive care referrals (e.g., physical therapy, nutrition, psychological support), and the type of healthcare coverage and reimbursements available that affect prescription practices and referral patterns (Borneman et al.).

As part of a five-year ongoing clinical trial sponsored by the National Cancer Institute (NCI) designed to translate the NCCN’s CRF and pain guidelines into practice (R01-CA-115323; known as the Barriers study), many of the barriers previously mentioned in this article were confirmed during phase 1 of the study (usual care) and implemented prior to the study’s intervention phases (Borneman et al., 2007). The most frequent patient-related barrier documented in the study was the patient’s belief that the physician would ask about fatigue if it was important, followed by the patient’s desire to play the “good patient” role (Borneman et al.). The most common provider- and system-related barriers documented by medical record audits performed by the research team were the lack of guideline adherence indicators, CRF assessment documentation, and CRF supportive care referrals.

National Comprehensive Cancer Network Guidelines for Cancer-Related Fatigue Assessment

Current NCCN guidelines for CRF assessment state that CRF is a subjective experience that needs to be assessed systematically using the patient’s own self-report or perception of fatigue and other sources of information (Mock, Abernathy, et al., 2007). Therefore, patients should routinely and systematically be asked by oncology nurses and other healthcare providers to describe their fatigue in their own words using a standard format that also is documented in the medical record. Healthcare providers should not wait for patients to volunteer that they are fatigued because waiting for patients to initiate the subject is a known barrier (Homsi et al., 2006) and may contribute to patients experiencing increased fatigue.

Screening assessments by healthcare providers should include asking patients if they have fatigue (i.e., its presence or absence) and, if present, asking patients to rate fatigue’s intensity by using a simple numeric rating scale (NRS) such as a 0 (no fatigue) to 10 (worst fatigue you can imagine) intensity scale. Similar to pain scales, mild fatigue is indicated by a score of 1–3, moderate fatigue as 4–6, and severe fatigue as 7–10. Patients who cannot rate their fatigue using the 0–10 scale should be asked to rate their fatigue by using the words none, mild, moderate, or severe. The provider should document which scale patients prefer and use this same scale during each visit. For children aged 7 years or younger, the guidelines recommend using the words tired or not tired.

Although a number of validated scales for patients with cancer can be used to screen and measure CRF, the NCCN guidelines

At a Glance

- The National Comprehensive Cancer Network (NCCN) has devised guidelines for cancer-related fatigue (CRF) assessment and treatment.
- Barriers exist against the implementation of NCCN guidelines into practice and oncology nurses play a role in overcoming the barriers.
- Multiple CRF assessment and screening tools are available.
recommend that adult patients be asked to rate their fatigue on a 0–10 scale over the past seven days (Mock, Atkinson, et al., 2007). This method relies on patient recall and requires patients to average their fatigue intensity over the past seven days. The recommendation was made by the NCCN expert panel members because patients may tend to underestimate their fatigue level during their actual visits. More research should be done to validate this recommendation.

If the initial screening assessment indicates that CRF is absent or at a mild level, the patient and family should receive education about fatigue and common strategies for its management. Inherent in this education is teaching the patient and family about common patient-related barriers, including the importance of reporting fatigue and not waiting for providers to initiate the subject. Healthcare providers should teach patients and families to treat fatigue as if it were the “sixth vital sign,” to emphasize the importance of reporting fatigue so that the healthcare team can monitor and treat its consequences. All patients should be screened by the healthcare team for fatigue at their initial visit and rescreened at appropriate intervals, including during and after active cancer treatments, while in a long-term follow-up period, at the end-of-life stage, and whenever clinically indicated.

For patients who have moderate to severe fatigue (4–10 on the severity scale), supplementing education with further assessment and a workup that includes a more in-depth fatigue assessment (including onset, pattern, duration, changes over time, aggravating or alleviating factors, and interference in functioning) is necessary. A more focused history and physical examination that considers the patient’s current disease and treatment status, medications, and a review of systems should be conducted (Mock, Atkinson, et al., 2007). This assessment might include the use of a more multidimensional CRF measurement scale validated in patients with cancer. In addition, the guidelines recommend that assessment of seven treatable contributing factors be performed (i.e., anemia, pain, sleep difficulties, nutrition issues, deconditioning or changes in activity patterns, emotional distress [depression or anxiety], and presence of comorbidities). The seven treatable contributing factors are informally referred to as the “gang of 7.”

| Table 1. Single-Item, Single-Dimension Measures for Cancer-Related Fatigue |
|-------------------------|------------------|------------------|------------------|------------------|
| INSTRUMENT              | SOURCE           | TYPE             | DESCRIPTION                                               | RECOMMENDATIONS                                   |
| NCCN Intensity Scale    | Mock, Atkinson, et al., 2007; Piper 2004; Stone et al., 1998 | NRS              | One-item scale designed to assess severity. Patients are asked to rate their fatigue on a 0–10 scale, with 0 indicating no fatigue and 10 indicating worst fatigue. For patients unable to choose a number, descriptive words such as none, mild, moderate, or severe may be substituted. Children aged 7 and younger should simply be asked if they are tired or not tired. | All NCCN intensity scales are recommended for practice and research screening. |
| Fatigue Intensity Scale | Borneman et al., 2007; Piper et al., 1999 | NRS              | One-item scale designed to assess intensity. Fatigue is rated on a scale of 0–10, with 0 indicating no fatigue and 10 indicating overwhelming fatigue. Scale also has face, content, and strong concurrent validity estimates with the Revised Piper Fatigue Scale and strong criterion validity estimates. | Can be recommended for practice and research screening. |
| Rhoten Fatigue Scale    | Blesch et al., 1991; Pickard-Holley, 1991; Rhoten, 1982; Winsch-Fry, 1998; Wu & McSweeney, 2001 | NRS              | One-item scale designed to assess severity. On the scale of 0–10, 0 indicates not tired and 10 indicates totally exhausted. | Can be used for practice screening. |
| VAS for Fatigue         | Glaus, 1993; Hauser & Walsh, 2008; Sutherland et al., 1989 | VAS              | One-item scale designed to assess severity. Scaling is done with a 10 cm, 0–100 mm horizontal line. The left of the scale (0) indicates that the patient does not feel tired and the right of the scale (100) indicates that the patient feels totally exhausted. | Can be recommended for practice and research screening. Has been tested primarily in Swiss and German patients with cancer. As with any VAS, the scale may have measurement characteristics that need to be considered when using it in practice or research settings. |
| NCI Common Terminology  | Basch et al., 2006; Huchka & Burger, 2006 | Likert           | One-item scale designed to assess severity. Scaling is 1–5, with 1 indicating mild fatigue over baseline, 2 indicating moderate fatigue or difficulty performing some activities of daily living, 3 indicating severe fatigue which interferes with activities of daily living, 4 is disabling, and 5 is death. | Not recommended for practice until further studies establish its use as a reliable and valid patient-reported outcome measure. |

NCCN—National Comprehensive Cancer Network; NCI—National Cancer Institute; NRS—numeric rating scale; VAS—visual analog scale
Cancer-Related Fatigue Assessment and Screening Scales for Practice and Research

Several reviews describe the various CRF assessment and screening scales for use in practice (Ahlberg, Ekman, Gaston-Johansson, & Mock, 2003; Dittner, Wessely, & Brown, 2004; Hjollund, Andersen, & Bech, 2007; Jacobsen, 2004; Jean-Pierre et al., 2007; Mota & Pimenta, 2006; Piper, 2004; Prue et al., 2006; Wu & McSweeney, 2001). The reviews also describe CRF measurement scales used in research studies that might be used as part of a more detailed workup should a patient have a moderate to severe CRF score (i.e., 4 or more on a 0–10 scale).

Table 1 describes CRF screening scales that can be used in practice settings, including single-item NRPs, Likert-type rating scales, and visual analog scales (VASs) (Waltz, Strickland, & Lenz, 2005). The scales are somewhat similar in design in that they each measure a single dimension (intensity) of CRF and vary in length from a 10 cm or 100 mm horizontal or vertical line (used in VASs) to a horizontal 0–5 or 0–10 Likert-type or NRS with word anchors on each end of the scale. Likert-type scales may sometimes include specific wording that accompanies each numeric value that represents varying degrees of intensities. One 0–10 NRS item taken from a multidimensional CRF scale has been used as a measure of intensity in a series of studies when more frequent or daily CRF measurements are needed (Berger et al., 2002; Berger, Farr, Kuhn, Fischer, & Agrawal, 2007).

Table 2 describes the multi-item, single-dimension intensity measures defined but has not been tested in practice settings. Additional studies are needed to evaluate whether these scales provide new data useful for treatment workup and planning.

Table 3 describes the multidimensional CRF measures that have been validated in patients with cancer but have not yet been tested in practice settings. These scales might be used as part of a more detailed assessment of fatigue once a single-item intensity screening scale indicates that moderate to severe fatigue exists. Additional studies are needed to evaluate whether these multidimensional CRF scales provide additional data useful for treatment workup and planning.

Table 4 describes some of the single-item and multi-item measures of CRF that are embedded in other scales that, for the most part, measure various symptoms, mood states, or quality of life. This article will not give an exhaustive review of these types of measures but they are included here as examples of symptom management and symptom cluster research (Barsevick, 2007, Buchanan et al., 2007) where patients may present with more than one symptom that may need to be assessed, treated, and documented in the medical or electronic medical record. More studies are needed to determine the suitability of these scales for use in practice.

Much discussion has ensued in the research literature as to whether CRF is a symptom or a syndrome (a complex of signs and symptoms that indicate an abnormal condition or a disease state) (Cella et al., 1998). A lack of clearly defined criteria for

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### Table 2. Multi-Item, Single-Dimension Measures for Cancer-Related Fatigue

<table>
<thead>
<tr>
<th>INSTRUMENT</th>
<th>SOURCE</th>
<th>DESCRIPTION</th>
<th>ADVANTAGES/DISADVANTAGES</th>
</tr>
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<tbody>
<tr>
<td>Brief Fatigue Inventory</td>
<td>Jean-Pierre et al., 2007; Mendoza et al., 1999</td>
<td>Nine-item scale measuring intensity or severity of fatigue in patients with cancer.</td>
<td>Has not been tested in practice settings but is widely used in clinical trials</td>
</tr>
<tr>
<td>Cancer-Related Fatigue Distress Scale</td>
<td>Holley, 2000a, 2000b; Piper, 2004</td>
<td>20-item scale measuring distress. Scaling is done on a 0–10 Likert-type scale and assesses fatigue during the previous seven days.</td>
<td>Validated in cancer survivors; written at a third-grade reading level</td>
</tr>
<tr>
<td>Pearson-Byars Fatigue Feeling Tone Checklist</td>
<td>Graydon et al., 1995; Irvine et al., 1994; Pearson &amp; Byars, 1956; Piper, 2004</td>
<td>10-item scale measuring intensity or severity. Patients rate whether they feel the same as, worse than, or better than. Scores range from 1–10, with 1 indicating very peppy and 10 indicating ready to drop. Scores are added together to give a total fatigue score (8–10).</td>
<td>Colloquial wording; patients may have difficulty knowing how to respond to certain items; developed originally for use in pilots; three-point rating scale may not provide enough variability to assess different fatigue levels</td>
</tr>
<tr>
<td>Wu Cancer Fatigue Scale</td>
<td>Wu et al., 2006; Wu &amp; McSweeney, 2004</td>
<td>Nine-item scale measuring intensity or severity. Scaling is scored from 1–5, with 1 indicating not at all fatigued and 5 indicating very much fatigued.</td>
<td>Easy to use and score in practice and research settings</td>
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</tbody>
</table>
Table 3. Multidimensional Cancer-Related Fatigue Measures

<table>
<thead>
<tr>
<th>INSTRUMENT</th>
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<th>DESCRIPTION</th>
<th>ADVANTAGES/DISADVANTAGES</th>
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<tbody>
<tr>
<td>Cancer Fatigue Scale</td>
<td>Okuyama, Akechi, Kugaya, Okamura, Imoto, et al., 2000; Okuyama, Akechi, Kugaya, Okamura, Shim et al., 2000; Piper, 2004</td>
<td>15-item scale designed to assess physical, cognitive, and affective fatigue dimensions. Scaling is on a five-point Likert, with 1 indicating not at all and 5 indicating very much. Scores range from 0–28, physical; 0–16, affective; and 0–16, cognitive. Maximum score is 60.</td>
<td>Simple and easily completed in two minutes, even by patients with advanced cancer. Primarily tested in Japanese patients with cancer; therefore, requiring cross-cultural validation</td>
</tr>
<tr>
<td>Chalder Fatigue Questionnaire</td>
<td>Chalder et al., 1993; Knobel et al., 2003; Piper, 2004</td>
<td>11-item scale designed to assess physical and mental fatigue dimensions. Scaling is on a four-point Likert, with 0 indicating less than usual and 3 indicating much more than usual. Scores are summed for total fatigue.</td>
<td>Easy to administer and score</td>
</tr>
<tr>
<td>Fatigue Assessment Questionnaire</td>
<td>Beutel et al., 2006; Glaus et al., 1996; Glaus &amp; Muller, 2001; Piper, 2004</td>
<td>20-item scale designed to assess physical, affective, and cognitive fatigue dimensions. Scaling is done on a four-point rating scale that measures intensity and distress during the previous week and month (0 indicates not at all and 3 indicates strongly; + 3 indicates that additional VAS is needed to measure fatigue and distress)</td>
<td>Developed to measure fatigue in patients with cancer; has been tested primarily in Switzerland and Germany; needs further cross-cultural validation</td>
</tr>
<tr>
<td>Fatigue Symptom Checklist</td>
<td>Haylock &amp; Hart, 1979; Piper, 2004; Saito et al., 1970; Yoshitake, 1969, 1971, 1978</td>
<td>30-item scale designed to assess decreased motivation or mental fatigue, general fatigue, and feelings of incongruity. Scaling is done through a dichotomous method (i.e., yes or no), a 1–5 Likert, and a 0–10 NRS.</td>
<td>Originally developed for healthy Japanese industrial workers; has been tested in patients with cancer</td>
</tr>
<tr>
<td>Lee Fatigue Scale (formerly the VAS for Fatigue)</td>
<td>Breitbart et al., 2001; Lee et al., 1991; Meek et al., 2000; Okuyama, Akechi, Kugaya, Okamura, Imoto, et al., 2000; Okuyama, Akechi, Kugaya, Okamura, Shim, et al., 2000; Winstead-Fry, 1998</td>
<td>13-item scale designed to assess decreased energy and fatigue. Scaling is rated on a 0–10 NRS and has established cut scores.</td>
<td>Easy to use and score</td>
</tr>
<tr>
<td>Multidimensional Assessment of Fatigue (MAF)/Global Fatigue Index (GFI)</td>
<td>Meek et al., 2000; Piper, 2004</td>
<td>16 items on the MAF and 15 on the GFI which measure intensity, distress, interference in activities of daily living, and timing. Scaling is done on a 0–10 range; frequency item is 0–4.</td>
<td>Developed from the original version of the Piper Fatigue Scale; dimensions or factor structure may not be stable across studies (i.e., validity issue).</td>
</tr>
<tr>
<td>Multidimensional Fatigue Inventory</td>
<td>Jean-Pierre et al., 2007; Piper, 2004; Schneider, 1998a, 1998b; Smets et al., 1995, 1996, 1998; Stone et al., 1998</td>
<td>20-item scale designed to assess general fatigue, reduced physical and mental activity, and reduced motivation. Scaling is done on a five-point Likert; does not evaluate a summed total score.</td>
<td>Tested in patients with cancer receiving radiation therapy; should be tested in other populations</td>
</tr>
<tr>
<td>Fatigue Symptom Inventory</td>
<td>Hann et al., 1998, 1999, 2000; Jacobsen, 2004; Stein et al., 1998</td>
<td>14-item scale designed to assess severity, frequency, diurnal variation, and perceived interference with quality of life. Scaling is done on a five-point scale (severity, four items; frequency, two items; diurnal variation, one item; interference, seven items).</td>
<td>Validated in patients with cancer</td>
</tr>
<tr>
<td>Revised Piper Fatigue Scale</td>
<td>Berger et al., 2007; de Jong et al., 2006; Mock et al., 2005; Ostlund et al., 2007; Piper et al., 1998</td>
<td>22 items plus five additional open-ended items related to the temporal dimension of fatigue, perceived cause, effect, relief, and additional symptoms not included in the scoring. Dimensions studied include behavioral or severity, affective meaning, sensory, and cognitive or mood. Scaling is done on a 0–10 NRS; total and subscale mean scores are derived by summing the individual items and dividing by the number of items in the subscale/total scale to maintain the 0–10 scaling.</td>
<td>One of the most well-developed and widely used cancer-related fatigue multidimensional scales; developed initially to measure fatigue in patients with cancer but now is also used in other populations</td>
</tr>
<tr>
<td>Revised Schwartz Fatigue Scale</td>
<td>Schwartz, 1988; Schwartz &amp; Meek, 1999; Wu et al., 2006</td>
<td>Six-item scale used to assess physical and perceptual dimensions of fatigue. Scaling is done on a five-point NRS, with 1 indicating not at all and 5 indicating extreme in the past two to three days.</td>
<td>Easy to use and score</td>
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</tbody>
</table>

NRS—numeric rating scale; VAS—visual analog scale
identifying a CRF case diagnostically for research, disability, and reimbursement purposes may limit the field; however, based on two telephone surveys (Curt et al., 2000; Vogelzang et al., 1997), a group of researchers put forth criteria for CRF to be included in the International Classification of Diseases-10 (ICD-10). The criteria are undergoing further research and debate to determine their validity and clinical applicability (see Figure 1).

Role of Oncology Nurses in Translating the Guidelines

Oncology nurses can play vital roles in translating the NCCN’s fatigue assessment guidelines into practice. One role can include identifying and breaking down the patient-related barriers that may exist. For example, in addition to the NCCN recom-

Table 4. Single- and Multi-Item Cancer-Related Fatigue Measures Embedded in Other Scales

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Profile of Mood States Fatigue and Vigor subscales</td>
<td>McNair et al., 1992; Meek et al., 2000; Mendoza et al., 1999</td>
<td>Five- to seven-item fatigue subscale and eight-item vigor subscale, both designed to measure intensity. Scaling is done on a five-point Likert over the previous week.</td>
<td>Scales include colloquialisms (i.e., bushed, worn out, and full of pep); may have floor and ceiling effects (i.e., may not be sensitive to the wide range of scores that patients may want to indicate)</td>
</tr>
<tr>
<td>Rotterdam Symptom Checklist</td>
<td>de Haes et al., 1990; Jean-Pierre et al., 2007</td>
<td>One-item scale designed to measure distress. Scaling is done on a four-point rating scale (i.e., have you been bothered by tiredness, lack of energy, or difficulty sleeping: not at all, a little, quite a bit, very much).</td>
<td>Simple to administer and score</td>
</tr>
<tr>
<td>Symptom Distress Scale</td>
<td>Boehmke, 2004; Jean-Pierre et al., 2007; McCorkle &amp; Quint-Benoliel, 1983</td>
<td>One-item scale designed to measure distress. Scaling is done on a five-point Likert.</td>
<td>Simple to administer and score</td>
</tr>
<tr>
<td>European Organization for Research and Treatment of Cancer 30-Item Quality-of-Life Scale Fatigue subscale</td>
<td>Aaronson et al., 1993; Jean-Pierre et al., 2007; Stone et al., 1998</td>
<td>Four-item scale measuring intensity. Scaling is done on a four-point Likert with questions such as “during the past week, did you need to rest, have you felt weak, were you tired” with answers consisting of 1, not at all; 2, a little; 3, quite a bit; or 4, very much.</td>
<td>Used in many clinical trials particularly in Europe; scores should be converted to 0–100 scaling.</td>
</tr>
<tr>
<td>Functional Assessment of Cancer Therapy Fatigue subscale</td>
<td>Cella &amp; Webster, 1997; Stone et al., 1998; Yellen et al., 1997</td>
<td>13-item scale designed to measure intensity or severity. Scaling is done on a four-point Likert.</td>
<td>Used in many clinical trials; higher scores denote less fatigue.</td>
</tr>
<tr>
<td>SF-36® Vitality subscale</td>
<td>Jean-Pierre et al., 2007; McHorney et al., 1993; Piper, 2004</td>
<td>Four-item scale designed to measure vitality. Scaling is done on a 0–100 measure, with scores above 50 indicating general well-being and scores below indicating fatigue.</td>
<td>Includes colloquialisms (i.e., full of pep and worn out); scores should be converted to 0–100 scaling.</td>
</tr>
<tr>
<td>Fatigue Severity Scale</td>
<td>Krupp et al., 1989; Stone et al., 2001</td>
<td>Nine-item scale designed to measure fatigue impact. Scaling is done on a seven-point Likert (1 indicates strongly disagree and 7 indicates strongly agree).</td>
<td>Simple to administer and score</td>
</tr>
<tr>
<td>MD Anderson Symptom Inventory</td>
<td>Cleeland, 2000; Cleeland et al., 2000; Jean-Pierre et al., 2007</td>
<td>One-item scale designed to measure intensity and interference. Scaling is on a 0–10 measure, with 0 indicating not present and 10 indicating as bad as one can imagine.</td>
<td>Simple to administer and score</td>
</tr>
<tr>
<td>Edmonton Symptom Assessment System</td>
<td>Bruera et al., 2007; Chow et al., 2005; Reddy et al., 2007</td>
<td>One-item scale designed to measure intensity. Scaling is done on a 0–10 measure, with 0 indicating no fatigue and 10 indicating worst fatigue.</td>
<td>Simple to administer; developed to measure fatigue in patients in palliative care and end-of-life stages</td>
</tr>
<tr>
<td>Linear Analogue Self-Assessment Scale</td>
<td>Locke et al., 2007</td>
<td>One-item scale designed to measure severity. Scaling measures an average level of fatigue, with scores ranging from 0–10.</td>
<td>Simple to administer; may have certain measurement characteristics that need to be considered if used in practice or research settings</td>
</tr>
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</table>
The role of oncology nurses in translating CRF guidelines into practice is highlighted in determining the frequency and severity of fatigue. Assessing patient-related barriers to implementation is crucial, including age, educational level, and symptom characteristics such as sensory or motor limitations, which can affect the selection of appropriate assessment scales. For instance, when selecting scales for fatigue assessment, the type of setting—whether inpatient or outpatient—may dictate the choice of scale. The use of NCCN recommendations for patient education is important, and healthcare providers should be aware of patient-related barriers, such as fear of receiving bad news.

A case study involving Carol, a 35-year-old African American woman with stage IV bilateral adenocarcinoma of the breast, demonstrates the challenges faced in translating CRF guidelines into practice. After completing six cycles of docetaxel and trastuzumab, Carol experienced a marked decrease in fatigue severity, which could be managed with self-care strategies. The healthcare team, including advanced practice nurses and physicians, recognized the need for ongoing monitoring and support referrals. The Barriers study emphasized the importance of bringing up fatigue for discussion, particularly in clinical settings. The proposed International Classification of Diseases-10 Criteria for Cancer-Related Fatigue provides a framework for assessing and managing fatigue, which can assist in the evaluation of fatigue's onset, pattern, and duration, as well as its impact on functioning.
lasted two to three hours apiece. She was counseled to begin using walking as a form of exercise and told to keep her naps short to maintain nighttime sleep patterns. After talking with Carol and her physician, supportive care referrals for occupational and physical therapy along with an “as needed” sleep medication were initiated.

Carol eventually underwent a wedge resection to remove her pulmonary nodule and was later started on trastuzumab every three weeks for one year. Her fatigue levels gradually decreased from 7 to 4 over the course of three months as she continued her walking program.

Case Study 2

Lydia was an 83-year-old Filipino woman originally diagnosed with stage I left breast cancer that was discovered through routine mammography. She underwent a left breast segmentectomy. The tumor was ER/PR positive but HER2 negative, so her staging after surgery was T1aN0. She was started on letrozole. After two years of letrozole use, she was referred to the Barriers study and she agreed to participate.

From a fatigue standpoint, what should be assessed first?

a. The presence of comorbidities
b. The presence of anemia
c. Pain, insomnia, nutritional issues, or emotional distress
d. Current activity pattern
e. Level of fatigue

The preferred response is e. Lydia was asked about her level of fatigue severity and rated it as a 5 on a 0–10 scale.

Because Lydia had moderate fatigue, the healthcare providers conducted a detailed fatigue assessment (onset, pattern, duration, changes over time, associated and alleviating factors, and interference with functioning), performed a focused history, physical examination, review of systems and medications, and considered her disease and treatment status (i.e., stage I, on letrozole). In addition, the gang of 7 was assessed. Based on the workup, it was discovered that Lydia had several comorbidities, including gastroesophageal reflux disease, osteoarthritis, hypertension, congestive heart failure, and hypothyroidism, and was prescribed pantoprazole, amlodipine, candesartan, and levothyroxine. Lydia was confined to a wheelchair because of her arthritis and was taking celecoxib for related pain. She had no evidence of anemia, insomnia, or nutrition-related issues. When the healthcare providers assessed any patient-related barriers, Lydia explained that she had limited physical activity secondary to her arthritis.

Lydia’s primary caregiver is her daughter who is a nurse. The daughter informed the healthcare providers that she encourages her mother to get out of the wheelchair because Lydia does not need it all the time. However, Lydia was very attached to her wheelchair and did not want to aggravate her osteoarthritis by moving around. A consultation and referral were initiated to Lydia’s physician regarding her arthritis treatment, inactivity, and pain management and to an occupational and physical therapist by her physician to determine appropriate wheelchair exercises that could be performed. Follow-up visits at one and three months revealed that Lydia’s fatigue was remaining stable at a moderate level (i.e., 4–5 on a 0–10 scale).


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