

<b>Outcome Measure</b>	<b>Fatigue Severity Scale (FSS)</b>
<b>Sensitivity to Change</b>	Yes
<b>Population</b>	Adult
<b>Domain</b>	TBI-Related Symptoms-Fatigue
<b>Type of Measure</b>	Self-report
<b>ICF-Code/s</b>	b4
<b>Description</b>	<p>The FSS is a 9-item scale that measures the severity of fatigue and how much it affects the person's activities and lifestyle in patients with a variety of disorders. Currently there are two more versions of the FSS: FSS-7, FSS-5.</p> <p>The items are scored on a 7 point scale with 1=strongly disagree and 7=strongly agree. The minimum score=9 and maximum score possible=63. Higher the score=greater fatigue severity. More common way of scoring: mean of all the scores with minimum score being 1 and maximum score being 7. Mean (SD) FSS scores for healthy individuals; 2.3 (0.7). Cut-off score of 4 or more considered indicative of problematic fatigue.</p> <p>Administration time is less than 5 mins.</p>
<b>Properties</b>	<p><b>Test-Retest:</b> Test retest reliability of the scale found no significant differences on the FSS scores from time one to time two. Patients were tested at 2 time periods separated by 5 to 33 weeks (Krupp et al., 1989). When tested with a group of patients who had been diagnosed with Hep C the ICC scores were 0.82   (Taylor et al., 2000). ICC values for Turkish study were found to be 0.81 (Armutlu et al. 2007). The scale has been found to have good test-retest reliability (Dittner et al., 2004).</p> <p><b>Internal Consistency:</b> Cronbach's alpha scores for the FSS were .81 for an MS population, .88 for a normal healthy population. (Krupp et al., 1989). Cronbach alpha scores for those with Hep C was 0.94 and the CC were 0.82 (Taylor et al., 2000). Paired t-tests were completed looking at the scores from the screening test and the baseline tests, but no difference were found (mean difference -0.03, t=0.95, p=0.34) (Taylor et al., 2000). Armutlu et al.2007 found Cronbach scores ranged between 0.8899 and 0.9401. Ziino and Ponsford (2005) found good internal consistency when the scale was used with a group of TBI patients (Cronbach score .90 with item total correlation ranging from .37 to .84). Overall the scale has been found to have high internal consistency (Dittner et al., 2004). It has been suggested that the scale could be shortened as there appear to be a high level of redundancy with in the scale (Amtmann et al., 2012). In a study with polio patients, Cronbach score was greater than .95, with item to total correlation ranging from .68 to .88 (Burger et al., 2010).</p> <p><b>Concurrent validity:</b> FSS scores have been found to be highly correlated with both Visual Analogue Scale scores (r=-0.76 and the SF-36 (r=-0.76) (Taylor et al., 2000). Ziino and Ponsford (2005) have found the FSS, VAS-f</p>

	<p>subscales and COF subscales were all significantly correlated. Between the COF–ME and the COF-PE a strong positive correlation was found (<math>r=.56</math> for each measure). For the VAS-F (Vigour and Fatigue) lower vigour scores were associated with higher fatigue scores (Ziino and Ponsford, 2005).</p> <p><b>Construct validity:</b> LaChapelle et al. (1998) noted negative correlations between time since injury and the FSS (<math>r=-0.42</math>, <math>P&lt;0.001</math>), the impact of fatigue on cognitive and physical functioning (<math>r=-0.41</math>, <math>p&lt;0.001</math>; <math>r=-0.48</math>, <math>p&lt;0.48</math> respectively). Amtmann et al (2012), in a study that included only MS patients, found a high correlation with both the subscales of the MFIS and the MFIS total score. The FSS had the highest correlation with the MFIS-physical subscale (<math>p=0.77</math>) and the lowest correlation was with the MFIS Cognitive (<math>p=0.55</math>)</p> <p><b>Predictive validity:</b> The scale has been shown to discriminate between fatigued and non fatigued patients with brain injury of mixed aetiology (Friedman et al., 2010; LaChapelle et al., 1998; Krupp et al., 1989; Taylor et al., 2000). Burger et al. (2010) found only a moderate correlation between the 3 VAS scores (daily life, self care, and household and occupation) and the FSS scores possible due to the FSS measuring only physical symptoms of fatigue compared to the VAS.</p> <p>The FSS has been found to be sensitive to change with time and treatment (Dittner et al., 2004).</p> <p>When compared to the Modified Fatigue Impact Scale (MFIS) the FSS had floor to ceiling responses ranging from 0.9 to 6.8, while the MFIS had a range of 1.1 to 0.7 (Amtmann et al., 2012).</p> <p>The FSS has been used in numerous studies of fatigue following TBI in recent years Ziino &amp; Ponsford (2005, 2006), Ponsford et al., (2012, 2013) and has shown sensitivity to the impact of a light therapy intervention (Sinclair et al., 2014).</p>
<b>Advantages</b>	<p>The FSS scale is a self-report scale that is easy to administer and can be completed quickly with minimal effort.</p>
<b>Disadvantages</b>	<p>Although the overall score of the FSS is beneficial in distinguishing between groups, the individual questions are not able to do so (LaChapelle et al., 1998). Because no two fatigue scales measure the same thing it is strongly recommended that the user know: what aspect of fatigue they want to assess and why; whether or not a unidimensional or multidimensional scale should be used; and final is this scale beneficial to the population being assessed (Dittner et al., 2004). Another major concern with the scale is the use of a 7 point likert scale (completely disagree to completely agree). It is believed that 6 or more categories on any rating scale obscure the distinction between the categories. The collapsing of the options to three (disagree, neutral, agree) may improve the measure (Burger et al., 2010). The FSS has not been found to be a good instrument for measuring cognitive levels of fatigue in MS patients (Amtmann et al., 2012).</p> <p>There is no established “objective” measure of fatigue against which to assess validity. There has been no evidence of an association between</p>

	subjective fatigue and physical measures such as grip strength or performance on a thumb pressing task.
<b>Additional Information</b>	
<b>Reviewers</b>	Jennie Ponsford

### References

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