The Effect of Pain Scale: A tool to assist in evaluation of client reports of pain and disability

Janet Hunt, Latifa Kassam, Gerard Kerr, Tania Percy and Linda Waithman

Occupational therapists specialize in the evaluation of functional performance, specifically in the areas of self-care, productivity and leisure (CAOT, 1997; 2002). Occupational therapists also assess functional abilities and limitations through functional capacity evaluations. Two key elements of functional capacity evaluations are; (1) determination of effort and (2) consistency of client reports of pain and disability, compared to demonstrated function. Determination of effort establishes the degree of confidence the clinician can place on test results to accurately identify functional abilities and limitations. Determination of consistency of client reports of pain and disability, compared to demonstrated function, assists the clinician in establishing how much confidence should be placed on client reports.

It is possible to evaluate consistency by comparing reported disability (gathered through client interview and disability questionnaires) to demonstrated function during testing. However pain reports are more difficult to assess because there are two distinct factors to consider, pain intensity and the impact pain has on function. Validation of pain intensity reports is also difficult because pain is a subjective experience and cannot be quantified although it is possible to assess client reports of functionally limiting pain when it is correlated with actual observed performance. In recognition of this, some functional capacity evaluation protocols use functionally based pain scales to gather client reported pain levels during testing.

In addition, some functionally based pain scales also simultaneously link pain intensity to disability. When these scales are used, clients are asked to rate their pain using a numeric scale (typically 0 to 10) with associated indicators of pain intensity and disability levels. For example, a pain rating of 10 might be identified with, “Worst pain imaginable requiring immediate emergency hospitalization. Causes you to be completely incapacitated and barely able to talk”. The use of linked pain intensity and disability descriptors is based on the hypothesis that changing levels of pain should correspond with observable changes in function. A review of the literature indicated varying opinions as to whether or not pain is directly correlated with function (Lechner, Bradbury, & Bradley, 1998). In our clinical experience, clients may report pain or a change in pain intensity without necessarily an observable impact on their performance.

A review of the literature also identified several existing pain scales that focused on the following: rating pain intensity (e.g., Numeric Pain Intensity Scale, based on the Rating of Perceived Exertion Scale [Borg, 1982]); linking pain with function (e.g., Functional Pain Scale [Matheson, 2008]); or gathering information regarding the extent to which pain interferes with various activities (e.g. Neck Pain Disability Index [Vernon & Silvano, 1991]).

The Effect of Pain Scale
The purpose of this article is to introduce the Effect of Pain (EOP) Scale. The EOP Scale is unique because it gathers client ratings of functionally limiting pain in real time, for specific activities, that are distinct from their pain intensity. The EOP Scale allows clinicians and clients to focus on the impact of pain on function independent of changes in pain levels, recognizing there may not be a direct correlation between pain intensity and performance. There were no scales similar to the EOP Scale found in the literature review.

Description of the EOP Scale
The EOP Scale is a self-rating scale used to determine a client’s opinion of the extent to which pain is affecting their ability to perform activities (see Table 1).

<table>
<thead>
<tr>
<th>Effect of Pain (EOP) Scale</th>
<th>A = Normal ability</th>
<th>B = Slight limitation</th>
<th>C = Moderate limitation</th>
<th>D = Severe limitation</th>
<th>E = Unable to apply strength, move or stay in one position</th>
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<tbody>
<tr>
<td>Rating the effect of pain on strength, movement, or ability to stay in one position</td>
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Table 1. The EOP Scale example.

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If normal ability (A) is reported, there should be normal behaviors relative to the task and no clinical evidence of limitations. If slight limitation (B) is reported there should be subtle changes in function, such as mildly decreased strength, movement quality, or ability to maintain a posture. If moderate limitation (C) is reported, there should be objective signs of deteriorating function, such as guarding, slowing, and/or taking breaks. If severe limitation (D) is reported, clinical indicators of limitation should be more pronounced and frequent. If inability to continue (E) is reported, indicators of limitation should be marked, with inability to continue the task. If testing can be resumed after a recovery period (usually within five minutes), there should be a corresponding decrease in the degree of reported limitation.

The EOP Scale is usually administered in conjunction with selected use of a Numeric Pain Intensity Scale, 0-10+, where 0 represents no pain and 10+ represents maximal pain requiring emergency hospitalization (Borg, 1982). This scale allows clients to express levels of pain intensity separate from the context of function. Numeric pain ratings are recorded at the beginning and end of testing and at other intervals as deemed necessary. Numeric pain ratings are considered separately and should not be directly linked to ratings on the EOP Scale.

### Assessment process

At the beginning of an evaluation, the clinician provides descriptions of both scales to the client. The clinician explains to the client that pain and function are not the same, and it is normal to have pain but still be able to perform an activity. The Numeric Pain Intensity Scale (Borg, 1982) is used to record pain response in relation to activity. The EOP Scale is used to gather information regarding the extent to which the client judges pain to be impacting on their ability to perform a specific task. The clinician is then able to compare the client’s EOP Scale rating with observed function in order to evaluate consistency between the reported disability and the actual functional performance. The focus of testing is to evaluate how much pain impacts function and therefore the EOP Scale is used to a greater extent than the Numeric Pain Intensity Scale (Borg).

### A case example using the EOP Scale

Mrs. Jones is a 55-year old nurse with a low back injury. During testing she sat continuously for one hour while participating in an interview. During the first half hour, she sat evenly with minimal weight shifting. Following this, she shifted her weight more frequently and stood briefly on one occasion. Upon completion of the interview, she stood rather than sat. Following the break she was able to resume sitting, with occasional weight shifting.

Using the EOP Scale, Mrs. Jones was asked to rate the degree to which her low back pain affected her ability to sit at various times during the assessment. She rated sitting ability as normal (A) for the first half of the interview, despite slight low back discomfort. She identified moderate limitation (C) over the next half hour, reduced to between normal ability (A) and slight limitation (B) following the break. In this case, Mrs. Jones’s EOP ratings were consistent with her demonstrated function. The EOP Scale was also useful in describing recovery rates following symptom elevation.

### Discussion

The EOP Scale is used when pain is reported to be causing functional limitations. It is a clinical tool that is helpful in evaluating the accuracy and consistency of client reported disability. By using this scale, feedback can also be provided to clients in a manner that does not focus on their subjective experience of pain but rather looks at their function in response to pain. This can be helpful in educating clients regarding the separate concepts of pain and disability.

The EOP Scale may be less effective for some clients within specific population groups, such as those with minimal or no English language skills, those with limited cognitive capacity, and/or those who have firmly entrenched pain beliefs that make it difficult to distinguish varying pain intensities from performance.

Anecdotally, clinicians have found the EOP Scale to be a useful and practical clinical tool and it has been well received by clients. Clinicians can confidently rely on client reports of pain and disability in conjunction with objective test results when client ratings on the EOP Scale are consistent with observed function. If client ratings are not consistent with observed function, more weight will be placed on objective findings, provided the client gave high effort. If client ratings are not always consistent with demonstrated performance, the clinician can more easily identify discrepancies and weight consideration of client reports accordingly.

Over the past three years, the EOP Scale has been fully incorporated into functional capacity evaluation protocols used by the authors. It is currently being used with a broad spectrum of client populations including clients with soft tissue, orthopedic, and/or neurological injuries, chronic pain and varying medical conditions. It is also being used in a variety of clinical practice areas.
including cost of future care evaluations and community rehabilitation. The scale has been equally useful with clients in the acute phase of their recovery, those participating in active rehabilitation, or those who have functionally plateaued.

Development and application of the EOP Scale is ongoing. This article is intended to introduce the EOP Scale as a concept, not as an administration manual. Further research regarding the utility and psychometric properties of the EOP Scale is needed.

**References:**


