

## Journal Watch

### Accuracy of the Pain Numeric Rating Scale as a Screening Test in Primary Care

Krebs EK, Carey TS, Weinberger M. [J Gen Intern Med](#). 2007 Oct;22(10):1453-8. Epub 2007 Aug 1

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#### Abstract:

**BACKGROUND:** Universal pain screening with a 0-10 pain intensity numeric rating scale (NRS) has been widely implemented in primary care. **OBJECTIVE:** To evaluate the accuracy of the NRS as a screening test to identify primary care patients with clinically important pain. **DESIGN:** Prospective diagnostic accuracy study **PARTICIPANTS:** 275 adult clinic patients were enrolled from September 2005 to March 2006. **MEASUREMENTS:** We operationalized clinically important pain using two alternate definitions: (1) pain that interferes with functioning (Brief Pain Inventory interference scale  $\geq 5$ ) and (2) pain that motivates a physician visit (patient-reported reason for the visit). **RESULTS:** 22% of patients reported a pain symptom as the main reason for the visit. The most common pain locations were lower extremity (21%) and back/neck (18%). The area under the receiver operator characteristic curve for the NRS as a test for pain that interferes with functioning was 0.76, indicating fair accuracy. A pain screening NRS score of 1 was 69% sensitive (95% CI 60-78) for pain that interferes with functioning. Multilevel likelihood ratios for scores of 0, 1-3, 4-6, and 7-10 were 0.39 (0.29-0.53), 0.99 (0.38-2.60), 2.67 (1.56-4.57), and 5.60 (3.06-10.26), respectively. Results were similar when NRS scores were evaluated against the alternate definition of clinically important pain (pain that motivates a physician visit). **CONCLUSIONS:** The most commonly used measure for pain screening may have only modest accuracy for identifying patients with clinically important pain in primary care. Further research is needed to evaluate whether pain screening improves patient outcomes in primary care.

#### Strengths:

One of few studies using a well known assessment tool to screen for the presence of pain in patients being seen at a primary care clinic.

Prospective design with reasonable and calculated sample size.

Concomitant use of another pain assessment scale (Brief Pain Inventory) used along side the Numerical Rating Scale.

Comparison of Numerical Rating Scales to functional capabilities and 'clinically important pain.'

**Weaknesses:**

Non English patients excluded from the study.

As identified by the authors:

- There is no well established gold standard of clinically important pain;
- The authors set their own parameters for the same (taking prior studies and standards into consideration).

Selection bias of patients in the clinic-physicians could opt out patients.

Study was conducted in a single academic setting so results cannot be generalized.

**Relevance to Palliative Care:** The Numerical Rating Scale (NRS) is used frequently in palliative care settings to assess not only pain, but other symptoms such as nausea and shortness of breath. Given the poor accuracy for the NRS to identify patients with clinically important in the primary care setting, this study serves to remind practitioners that the NRS is a unidimensional tool, and the importance of completing a multidimensional assessment to appreciate the impact of pain and other symptoms on function, emotional well-being, and quality of life.