

# STANDARDIZING DEN BOER'S CRITERIA

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## Introduction

The outcome of spinal surgery and other invasive treatments for pain is influenced by a number of psychosocial variables. den Boer and colleagues developed an evidence-based method of presurgical psychological evaluation, employing a systematic review of the literature to identify variables empirically determined to be most predictive of a poor response to spinal surgery: depression, anxiety, somatization, pain complaints, dependency, job dissatisfaction, length of time in treatment, and education level. However, den Boer made no suggestions with regard to psychometrically standardizing this method for clinical use.

## Objectives

The purpose of this study was to develop a psychometrically standardized method of calculating den Boer's criteria for presurgical risk using the Battery For Health Improvement 2 (BHI-2) norms.

## Methods

The BHI-2 profiles, demographic and other information was gathered from 527 patients in multidisciplinary treatment for pain or injury. Additionally, 725 community members were assessed as a control. Using these data, a standardized method was developed to calculate den Boer's criteria for presurgical risk. The dependent variable was a risk level score, calculated by employing a cutoff for each variable or BHI 2 scale that was one standard deviation above the mean of a national sample of 527 patients.

## Results

This method produced a risk score ranging from 0 to 9. The mean, standard deviation, median and mode of the den Boer scores were as follows for patients: 1.66, 1.98, 1.0, 0.0. In contrast, the community mean, standard deviation, median and mode were as follows: 0.92, 1.44, 0.0, 0.0.

## Method for Calculating Den Boer Criteria

Criteria	BHI 2 Sign
Depression	Depression T > 59
Anxiety	Anxiety T > 59
Somatization	Somatic Complaints T > 59
Pain	Pain Complaints T > 59
Function	Functional Complaints T > 59
Passive Coping	Symptom Dependency T > 59
Job Dissatisfaction	Job Dissatisfaction T > 59
Time Off Of Work	Days Off Of Work > 1006
Education	Education < High School

## Conclusions

Standardization is an important part of the clinical assessment of patients. A limitation of this study is that these means and norms would not apply to other methods of assessing den Boer's criteria.

## References

1. den Boer JJ, Oostendorp RA, Beems T, Munneke M, Oerlemans M, Evers AW. A systematic review of bio-psychosocial risk factors for an unfavourable outcome after lumbar disc surgery. *Eur Spine J.* 2006;15(5):527-536.
2. Bruns D, Disorbio JM. *Battery for Health Improvement 2 Manual.* Minneapolis: Pearson; 2003.

