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Commentary

Commentary on: Can the anxiety domain of EQ-5D and mental health items from SF-36 help predict outcomes after surgery for lumbar degenerative disorders? By Carreon *et al*.

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The question in the title of this paper practically answers itself. Can the anxiety domain of EQ-5D and mental health items from SF-36 help predict outcomes after surgery for lumbar degenerative disorders? Yes, paper and pencil questionnaires (however brief) purporting to assess patients' emotional status may contribute some small incremental value for predicting lumbar fusion outcomes. However, it has long been recognized that, as far as pain and function are concerned, predicting lumbar fusion outcomes is frustratingly difficult.

A historical perspective helps elucidate the problem. In the 1970s, there was a large surge of formation of comprehensive pain treatment centers, largely stimulated by the efforts at UVA (The University of Virginia) and the University of Washington. Neurosurgeons and Orthopedic surgeons, largely responsible for treating such conditions, were joined by anesthesiologists. The latter entered the arena of because of their experience with injections for pain. Together the spine surgeons and anesthesiologists formed multidisciplinary in-depth programs for the analysis and treatment of chronic pain conditions. This resulted in the formation of the International Association for the Study of Pain,[2] the American Pain Society,[4] and other national/international pain organizations. Multidisciplinary pain treatment programs, including physicians, nurses, physical and occupational therapists, and psychologists were increasingly organized to deal with chronic pain conditions.[3]

Such multidisciplinary collaborations were made possible by a fundamental shift away from a purely biomedical model toward a broader biopsychosocial model (e.g. late 1970's).[1] The results were that more patients with chronic low back pain underwent complex psychological (health-related behavior, emotional status, somatization) and social (socioeconomic status, culture, family environment, secondary gain) evaluations along with assessment of physical pathology. In short, psychological issues were re-approximated to the analysis of the purely physical aspects (nociception) of painful conditions.

Much research has since addressed the relationship between preoperative emotional status and outcome of lumbar fusion surgery. Certainly, the psychological status of the patient is one of the major predictors of the outcomes of lumbar fusions.[5] This current paper reduced the assessment of psychological issues to the response to just one question. Unfortunately, while accounting for "20% of the variance" may be of statistical significance, this means other factors account for the remaining 80%. Viewing many studies on this topic, it is not surprising

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that single data points are not found to account for much of the variance in outcomes (e.g. whether one considers demographic, psychological, or physiological data).

This study, therefore, offers little practical assistance to spine clinic personnel, who have no sophisticated psychological training. Nevertheless, many are increasingly charged with identifying depressed or anxious patients, and responsible for directing them toward preoperative psychological or behavioral counseling.

The current authors concluded "It is important to recognize that no single data point is likely to optimize patient selection." Another recent study stated "there is not enough evidence to determine which psychological variables are influential in predicting outcomes for LSF (Lumbar Spinal Fusion."[6] Both statement are true and the current study contributes little to improving the selection of patients for lumbar fusion surgery.

To account for the remaining 80% of the variance in predicting lumbar fusion outcomes, we have to acknowledge that the interaction of multiple biopsychosocial elements contribute very heavily and must be considered when attempting to predict those patients most likely to benefit from lumbar fusions. Finally, while decades of group based research has been enlightening, the fundamental challenge is to pinpoint those individual patients in the clinic at risk for unsatisfactory outcomes in lumbar fusion surgery. Currently, the identification of simple and speedy methods for accurately predicting individual outcomes remains as elusive as ever.

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