Three methods of presurgical psychological evaluation: standardization and empirical comparison

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There is strong evidence that the outcome of spinal surgery and other invasive treatments for pain is influenced by a number of psychosocial variables. Currently, there are three methodologies for assessing these variables that have a substantial empirical basis. The method based on the strongest evidence was developed by Den Boer and colleagues (Den Boer et al., 2006), who used a systematic review of the research to identify risk scores that were predictive of spinal outcome surgery. While Den Boer’s criteria was based on the highest level of evidence, it has the basic clinical utility. In contrast, the method developed by Block and colleagues (Block, 1996), Block, O’Connor, Goy, Tsuchida, & Rochester, 2005), while having some similarity to that of Den Boer, has the advantage of being integrated with a clinical care management protocol and a treatment algorithm. More recently, eight proposed methods of presurgical psychological evaluations for spinal surgery and spinal cord stimulator patients were reviewed, as was general research on psychological predictors factoring surgical outcome (Bruns & Disorbio, 2008). This study proposed what was referred to as the “Convergent Model,” which was based on a hypothesis that while the reviewed methods of presurgical psychological evaluations have been unique, there appears to be a convergence of evidence and opinion about a core set of clinical concerns, which could be assessed.

The purpose of the present study was to empirically compare the risk assessment scores generated by these three presurgical psychological evaluation methods. In order to do so, however, it was necessary to first develop a standardized method of assessing each one.

METHODS

The Battery For Health Improvement 2 (BHI-2) profiles, demographics and other information was gathered from 527 patients in multidisciplinary treatment for pain or injury, with 725 community members being assessed as a control. These data were gathered from 50 sites in 36 U.S. states. Using these data, standardized methods were developed to calculate presurgical risk using all three presurgical methods. This method was IRB approved.

A standardized method was developed to calculate Block’s criteria for presurgical risk (Disorbio, Bruns, & Bruns, 2012). This included calculating the total risk scores for patients using the BHI-2, and adverse clinical features using BHI-2 scales cutoffs of one standard deviation above the mean of the patient norms. Using these scores and Block’s assessment algorithm, Block’s five-level risk score was calculated. To examine Den Boer’s criteria, the risk factors of depression, anxiety, somatization, pain complaints, function, dependency, job dissatisfaction, and time in treatment were judged to be present if the observed scores exceeded cutoffs for one or two, or three standard deviations above the mean of the patient norms. Additionally, the education level risk factor was judged to be present if the subject was not a high school graduate. The result is a possible score range of 0-27, expanding upon an earlier method that did not weight the scores (Meyer, Bruns, Disorbio, & Bruns, 2012). As the exclusionary and cautionary risk factors have been standardized, that method was adopted here (Bruns & Disorbio, 2008).

RESULTS

The mean, standard deviation, median and mode of the Den Boer scores were as follows for patients: 3.69, 3.69, 2.0, 1 and for community members: 2.0, 2.0, 2.0, 2.0. In contrast, Den Boer’s criteria for presurgical psychological assessment. 6th World Congress Medicine, 13(35), (2006). A systematic review of bio-psychosocial risk factors for an unfavourable outcome after lumbar disc surgery. Eur Spine J, 15, 565-574. Bruns, D., & Disorbio, J. M. (2009). Assessment of biopsychosocial risk factors for clinical concerns, which need to be assessed.

The intertest reliabilities of the risk scores were assessed. Block psychological risks (.924, Block medical risks (.911), Block adverse clinical features (.912), Block overall risk score (.905), Den Boer score (.971), Cautionary score (.980), and the Exclusionary score (.990). This information can be found in Table 4.

CONCLUSIONS

A number of methods for presurgical psychological evaluations have been proposed, and these methods have distinct similarities and differences. All three of the methods studied, once standardized, were determined to be highly reliable, and an assessment of the validity of the den Boer, Cautionary, and Exclusionary risk scores exhibited moderate effect sizes. At the same time, the moderate intercorrelations of some of these scores demonstrates that they are at the same time valid, yet distinctly different. Further research is needed understand the relative merits of each approach.

本文为自然语言理解的文本，经过预处理、分词、词干提取和概念识别，生成了上述的自然语言描述。