

DO PSYCHOSOCIAL VARIABLES INFLUENCE SURGICAL OUTCOME?

Robert L. Sokolove, Ph.D

Director of Behavioral Medicine
Departments of Medicine, Psychiatry and Neurology
Boston Medical Center

Assistant Professor of Medicine & Psychiatry
Boston University School of Medicine

Medicare and Commercial Insurers require pre operative psychological assessment for:

Spinal Cord Stimulator Implant (SCS)
Bariatric Surgery

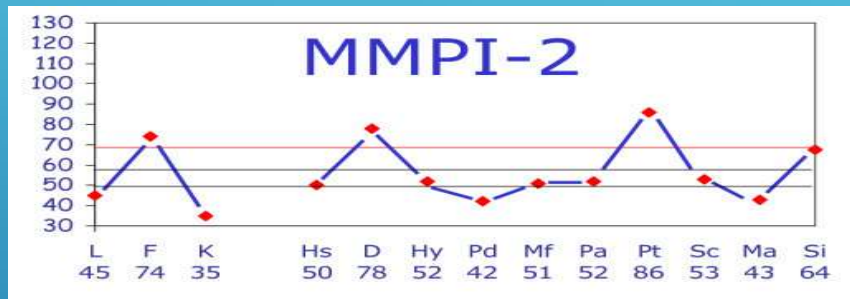
Providers may recommend pre operative psychological assessment for:

Deep Brain Stimulation
Cosmetic Surgery
Spine Surgery
Sex Reassignment Surgery

- ▶ 1) Emotional Stability
- ▶ 2) Elevation of depression scale score (Scale "D") on the MMPI
- ▶ 3) Cooperation with a rehabilitation program

SELECTION CRITERIA FOR SCS

(SHEALY, CN, MORTIMER, JT, RESWICK, JB, "ELECTRICAL INHIBITION OF PAIN BY STIMULATION OF THE DORSAL COLUMNS: PRELIMINARY REPORT", ANESTH ANALG 46 299-302, 1967)



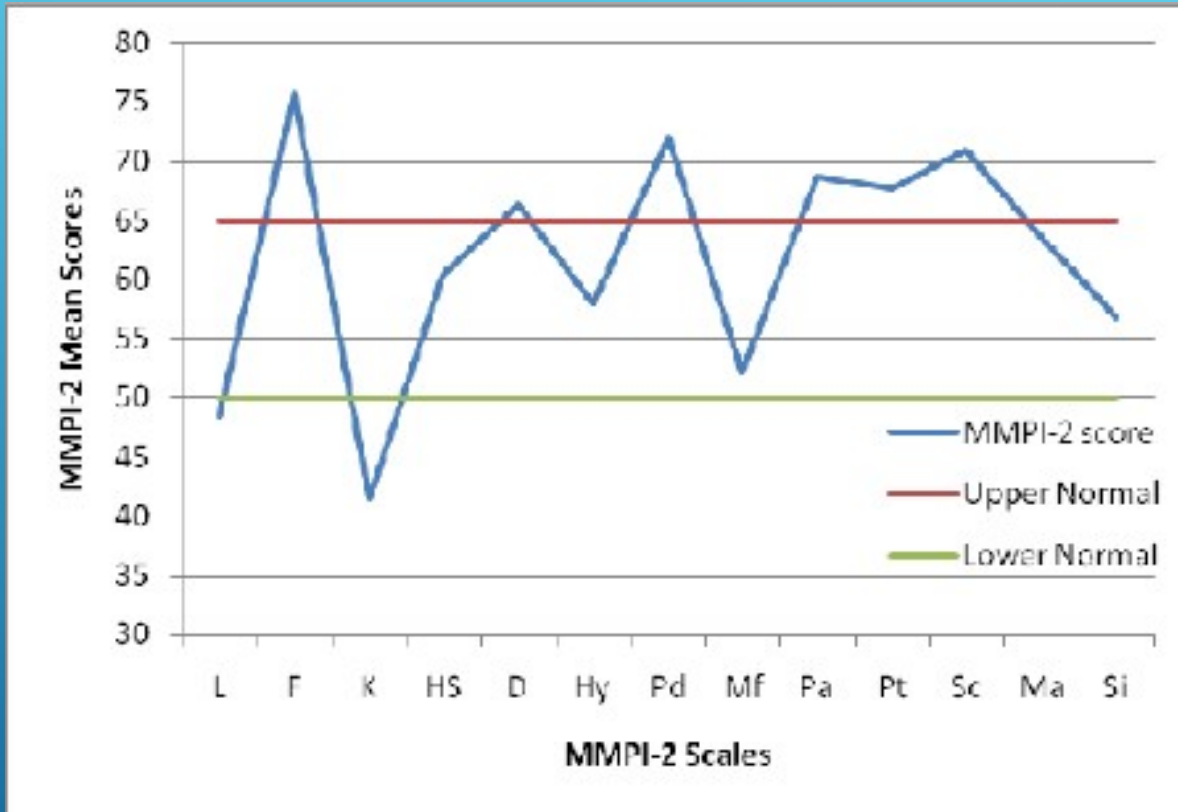
VS.



PSYCHOLOGICAL TESTING VS.
PSYCHOLOGICAL/PSYCHIATRIC INTERVIEW

- ▶ Published in 1939 by Hathaway and McKinley
- ▶ Consists of 567 endorse/no endorse items
- ▶ Originally consisted of 10 clinical scales and three validity scales
- ▶ Used as a measure of both psychopathology and personality
- ▶ Inferences about these constructs are based on how various diagnostic criterion groups scored on each of the 13 scales.
- ▶ Diagnostic criteria itself is based on the psychiatric nosology of late 19th Century – early 20th Century Europe.

THE MMPI



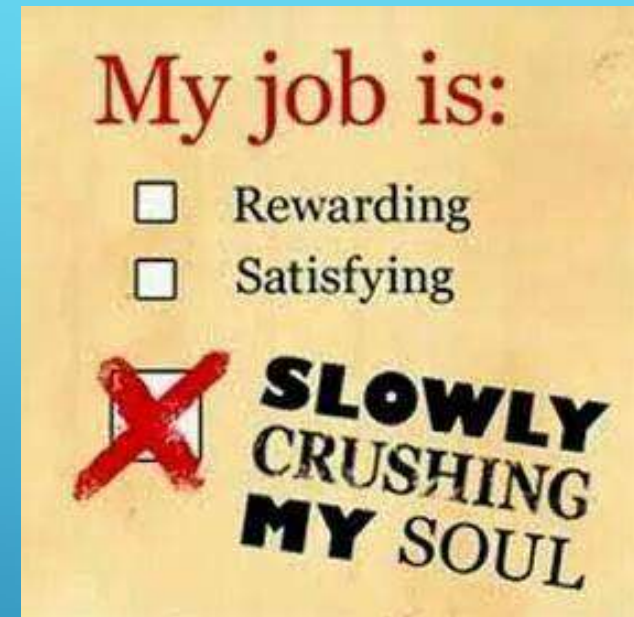
- ▶ Olsen, K.A, et. al. *Neuromodulation*, vol 1, no. 1, 6-13: Low “D” scale and high “Ma” Scale predict greater than 50% pain decrease
- ▶ Ruchinskas, R, & O’Grady, T, *Neuromodulation*, vol 3, no 4 183-189: High “K” scores and low “Hy” scores predict who will go one from trial to permanent implant

OTHER MMPI SCORES WHICH VARIOUS AUTHORS SUGGEST PREDICT SCS OUTCOMES

- ▶ However, multiple reviews(meta-analyses) of this literature suggest that there is great variability in different studies conclusions (which scale or combination of scales predicts surgical success) suggesting that the MMPI, at least by itself, may not be helpful in this task.
- ▶ North, RB, et.al. "Prognostic Value of Psychological Testing in Patients Undergoing Spinal Cord Stimulation: A Prospective Study", *Neurosurgery*, vol. 39, no. 3 August, 1996
- ▶ Sparkes, E. et.al., "A systematic literature review of psychological characteristics as determinants of outcome for spinal cord stimulation therapy, " *Pain*, 150, (2010) pp 284-289

EFFICACY OF MMPI ALONE AS PREDICTOR OF SURGICAL OUTCOME

- ▶ PENDING LITIGATION
- ▶ PENDING WORKMAN'S COMP CLAIM
- ▶ JOB DISSATISFACTION
- ▶ SUBSTANCE ABUSE: PRE-INJURY/CURRENT
- ▶ FAMILY REINFORCEMENT OF PAIN
- ▶ HISTORY OF CHILDHOOD SEXUAL OR PHYSICAL ABUSE



OTHER PSYCHOSOCIAL PREDICTORS OF POOR OUTCOME FOR BACK SURGERY.

BLOCK, A.R. ET. AL. "THE USE OF PRESURGICAL PSYCHOLOGICAL SCREENING TO PREDICT THE OUTCOME OF SPINE SURGERY" *THE SPINE JOURNAL*, 2001, 274-282

- ▶ History of Childhood Sexual or Physical Abuse
- ▶ Suicide attempts after the age of 18
- ▶ Current Opioid or Alcohol Addiction
- ▶ History of impulse control issues (DUIs, CORI record, uncontrollable rage)
- ▶ Extraordinary levels of current anxiety or depression
- ▶ Poor vocational, marital and social adjustment.



SOKOLOVE'S SUGGESTED PREDICTORS OF **POOR** SCS
IMPLANT OUTCOME (POOR PAIN RELIEF OR INCREASE IN
NEGATIVE MOOD)

- ▶ General Psychological Stability
- ▶ Effective defensiveness
- ▶ Moderate levels of self confidence and self-efficacy
- ▶ Mild depression appropriate to the situation
- ▶ Emotionally supportive kin and non-kin networks
- ▶ General optimism regarding both outcome of the procedure and life outcomes (regarding love and intimacy, work and employment, etc.)



SOKOLOVE'S SUGGESTED PREDICTORS OF **GOOD** SCS
IMPLANT OUTCOME (PAIN RELIEF OF AT LEAST 50%
WITHOUT ANY BEHAVIORAL CONSEQUENCES)

- ▶ 39 yo divorced male had MVA in 2008.
- ▶ Received an L2 laminectomy and a multi-level throacolumber fusion for the treatment of a traumatic L2 burst fracture.
- ▶ His pain was held in check by a high level of opioids which are no longer considered standard care in MA.
- ▶ No history of abusing his prescriptions but since his medications were down titrated his pain has become unbearable.
- ▶ On presentation his affect is overwhelming depressed and he cries during the interview. Work has always been his coping strategy for depression.
- ▶ He comes from an emotionally close, working class, religious family who support him, as do his children.

THE CASE OF "TOO MUCH FOR THE NEW STATE LAWS"

ALL IDENTIFYING INFORMATION HAS BEEN CHANGED IN THESE CASE

VIGNETTES.

- ▶ Depression post injury due to loss can suggest enhanced motivation for rehabilitation and an increase in pain tolerance.

THE CASE OF “TOO MUCH FOR THE NEW STATE LAWS”

- ▶ 52yo male reports acute onset of severe back pain upon awakening 30 years ago.
- ▶ He has had back surgery before and MRI reveals prior instrumentation hardware at L4-L5 from a transforaminal interbody fusion with halo sign around the left L5 screw. There is subsidence of the interbody cage into the endplates of the L4 and L5 vertebrae with no internal bony signal.
- ▶ He endured massive amounts of sexual and physical abuse as a child from both parents. He was finally removed from the home by the state and put into foster care where he was further sexually and physically abuse.
- ▶ He looks sad on presentation but says he is more anxious. Voice is soft in volume and he does not gaze directly at the interviewer. He reports both sleep onset insomnia and sleep duration insomnia
- ▶ His back pain has increased exponentially in the past two years and he is now considering SCS for pain management. He has never been in psychotherapy nor been on any psychotropic medications.

THE CASE OF THE “SAD LIFE”

- ▶ Intense pre-injury mood and anxiety disorders ideally should be stabilized prior to surgery.

THE CASE OF THE "SAD LIFE"

- ▶ 40 yo Spanish speaking male, here with an interpreter, referred for pre-surgical evaluation prior to STNDBS for Parkinson's Disease. Of note, dyskinesias are so severe that communication flow is disrupted.
- ▶ Pt reports close family growing up. No CSA,CPA,DV,ETOH or Drug use. Reports no hx of mood or anxiety disorders in himself or any 1st degree relatives
- ▶ Began feeling depressed after onset of PD 10 years ago, leading to one in-patient stay for depression.
- ▶ However social worker transfer summary notes pt's wife claims that pt. asked her to kill him, then stabbed himself in the chest when she refused and has been so assaultive to wife and children that wife asked for sanctuary in a DV shelter
- ▶ Pt's current psychiatrist says patient is on medication, his mood has been stable for the past year, he loves his two boys, and the psychiatrist strongly supports the operation.

THE CASE OF THE "SCARD WIFE"

▶ The Best Predictor of Future Behavior is Past Behavior.

THE CASE OF THE "SCARD WIFE"

- ▶ There are no prospective empirical studies to date that inform the question of which psychosocial variables accurately predict specific surgical outcomes
- ▶ Given the above, the best clinical practice is to use data gleaned from the clinical interview together with available psychological testing data, to form predictive opinions in accordance with good clinical judgment, clinical theory and common sense.

TAKE HOME POINTS