Pre-Implantation Psychological Screening: Factors that “Predict” Success or Failure

Lori M. van Veldhoven, Ph.D., M.P.H.
Department of PM&R
Baylor College of Medicine
Pre-Implantation Psychological Assessment

- Seek to identify an ideal patient who can achieve maximum benefit from an implanted device
- Often the combination of clinical interview, standardized testing, and/or self-report measures
- No “gold standard” psychological tests or method of assessment for pre-implantation evaluation
Predictive value of psychological testing appears to vary according to psychological and outcome metrics utilized (Fama et al., 2016)

Vast majority of studies focus on short-term SCS effectiveness (Campbell et al., 2013)
Depression and SCS Outcome

- Patients with lower levels of depression were considered better SCS candidates (Sparkes et al., 2010)

- Increased patient age and depression associated with increased post-implantation pain intensity (Burchiel et al., 1995)

- Depression inconsistently shown to be predictive of SCS outcome (Fama et al., 2016)
Somatization and SCS Outcome

- Somatization: communication of psychological distress in the health problems and seek medical help for them

- MMPI-2-RF scales that reflect preoccupation with health concerns, multiple somatic complaints, and feelings of being weak were correlated with poorer SCS outcomes at an average of 5 months (Block et al., 2017)
Literature review found that self-reported levels of anxiety were found to be associated with poor outcomes in most studies (Celestin et al., 2009)

State vs. Trait? Trait anxiety is less contraindicated, some studies find decrease in anxiety following successful SCS
Pain Beliefs and SCS Outcome

- Defined as pain perception, beliefs about pain, treatment expectations and pain acceptance
- Based on review of SCS literature, widely recognized as relevant predictors of treatment response (Campbell et al., 2013)
- Catastrophizing is one of the key psychological predictors of successful pain treatment outcomes (Campbell et al., 2009)
Pain Coping and SCS Outcome

- Increased perception of control pain (autonomous coping) and decreased catastrophizing at baseline associated less pain at 12 months after SCS (Sparkes et al., 2015)
- Longer-term SCS outcomes impacted by post-implant self-efficacy while depression and anxiety had no significant impact (Wolter et al., 2013)
How does Research Translate into Clinical Practice?

- Literature is not straightforward, reliance on clinician to translate into clinical practice.

- How, if all, would the psychosocial presentation contribute to a false positive or false negative trial?

- How, if all, would the psychosocial presentation contribute to long-term effectiveness?
Clinical Interview

Valid and reliable assessment of:
- Subjective pain intensity (VAS)
- Mood factors (BDI-II; BDA)
- Interference of pain on activity (PDI)
- Pain cognitions (PCS)
- Pain coping (CPCI)
- Knowledge of the implantable device, including expectation of pain relief
60-year-old male
History right lower extremity pain, onset 3 years ago
Diagnosed with CRPS
Underwent back surgeries in 1988 and 1992
Discectomy in Oct. 2014, March 2015
Spinal fusion Nov. 2015
Has had several steroid injections, which have resulted in temporary pain improvement
Current pain in right foot: 2-3
Worse pain in right foot: 3-4
Expectation of pain with SCS: 0
Depression & Anxiety: WNL
Pain Catastrophizing Scale: 35th %ile
Pain Disability Index: Mod Dis on Recreation
Pain Disability Index

Pain Disability Index: The rating scales below are designed to measure the degree to which aspects of your life are disrupted by chronic pain. In other words, we would like to know how much pain is preventing you from doing what you would normally do or from doing it as well as you normally would. Respond to each category indicating the overall impact of pain in your life, not just when pain is at its worst.

For each of the 7 categories of life activity listed, please circle the number on the scale that describes the level of disability you typically experience. A score of 0 means no disability at all, and a score of 10 signifies that all of the activities in which you would normally be involved have been totally disrupted or prevented by your pain.

Family/Home Responsibilities: This category refers to activities of the home or family. It includes chores or duties performed around the house (e.g. yard work) and errands or favors for other family members (e.g. driving the children to school).
No Disability: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10. Worst Disability

Recreation: This disability includes hobbies, sports, and other similar leisure time activities.
No Disability: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10. Worst Disability

Social Activity: This category refers to activities, which involve participation with friends and acquaintances other than family members. It includes parties, theater, concerts, dining out, and other social functions.
No Disability: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10. Worst Disability

Occupation: This category refers to activities that are part of or directly related to one’s job. This includes non-paying jobs as well, such as that of a housewife or volunteer.
No Disability: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10. Worst Disability

Sexual Behavior: This category refers to the frequency and quality of one’s sex life.
No Disability: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10. Worst Disability

Self Care: This category includes activities, which involve personal maintenance and independent daily living (e.g. taking a shower, driving, getting dressed, etc.)
No Disability: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10. Worst Disability

Life-Support Activities: This category refers to basic life supporting behaviors such as eating, sleeping and breathing.
No Disability: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10. Worst Disability
Case Presentation #1
Case Presentation #1

Goals:

- Return golfing
- Increase activity
- Stop cycle of injection, 4 week follow-up and no significant change in pain

Green light SCS trial?
Case Presentation #2

- 37-year-old female
- Chronic low back pain, onset 3 years ago
- Herniation and annular tear at L5/S1
- Multiple, subsequent degenerated discs in her lower back
- Underwent a proactive discogram in June 2017
- Has had steroid injections without improved pain management
Current pain in back: 5-6
Worse pain in back: 8
Expectation of pain with SCS: 2-3
Depression: Mild
Anxiety: Moderate
Pain Catastrophizing Scale: 88th %ile
Family/Home Responsibilities: This category refers to activities of the home or family. It includes chores or duties performed around the house (e.g. yard work) and errands or favors for other family members (e.g. driving the children to school).
No Disability 0. 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. Worst Disability

Recreation: This disability includes hobbies, sports, and other similar leisure time activities.
No Disability 0. 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. Worst Disability

Social Activity: This category refers to activities, which involve participation with friends and acquaintances other than family members. It includes parties, theater, concerts, dining out, and other social functions.
No Disability 0. 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. Worst Disability

Occupation: This category refers to activities that are part of or directly related to one’s job. This includes non-paying jobs as well, such as that of a housewife or volunteer.
No Disability 0. 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. Worst Disability

Sexual Behavior: This category refers to the frequency and quality of one’s sex life.
No Disability 0. 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. Worst Disability

Self Care: This category includes activities, which involve personal maintenance and independent daily living (e.g. taking a shower, driving, getting dressed, etc.)
No Disability 0. 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. Worst Disability

Life-Support Activities: This category refers to basic life supporting behaviors such as eating, sleeping and breathing.
No Disability 0. 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. Worst Disability
Case Presentation #2

[Graph showing illness-focused and wellness-focused coping strategies with T scores and percentile rankings]
Case Presentation #2

- **Goals:**
  - Become more active with children
  - Be able to do more household activities
  - Return to work

- **Green light SCS trial?**
References


References
