

Emotional Functioning

Robert D. Kerns, Ph.D.

VA Connecticut Healthcare System

And

Yale University

Why assess emotional functioning in pain outcome research?

- Widespread acceptance of multidimensional models of pain that acknowledge presence of emotional distress
- High prevalence and costs associated with emotional distress and disorder
- Documented relationship between pain and emotional distress, and evidence of relative independence
- Potential that emotional distress may mediate improvement in pain clinical trials

Primary dimensions of emotional distress

- Anxiety/fear
 - Pain-related fear/avoidance
- Depression/sadness
- Anger/irritability
 - Anger expression

Conceptual/empirical challenges

- Emotions as subjective, private events
- Emotion (discrete episodes) versus mood (continuous process)
- Trait versus state
- Unclear relationship with pain (reciprocal process?)
- Discriminations among negative emotional states
- Negative mood vs. symptom cluster vs. disorder
- Somatic symptoms as a contributor to false positive diagnosis and inflated prevalence rates

Measures of emotional distress

- Single item mood measures
- Multi-item mood measures
- Multi-symptom measures of emotional distress
- Multidimensional measures of emotional/
psychological functioning
- Semi-structured psychiatric diagnostic
interviews

Anxiety measures

- State-Trait Anxiety Inventory (Spielberger et al., 1970)
- Pain Anxiety Symptoms Scale (McCracken et al., 1992)
- Tampa Scale of Kinesiophobia (Kori et al., 1990)
- Fear-Avoidance Beliefs Questionnaire (Waddell et al., 1993)

Depression measures

- Beck Depression Inventory (Beck et al., 1961)
- Center for Epidemiological Studies – Depression Scale (Radloff, 1970)
- Hamilton Rating Scale for Depression (Hamilton, 1960)
- Zung Self-Rating Depression Scale (Zung, 1965)
- Geriatric Depression Scale (Yesavage & Brink, 1983)
- WHYMPI-Affective Distress (Kerns et al., 1985)

Anger measures

- Buss Durkee Hostility Inventory (Buss & Durkey, 1957)
- Cook-Medley Hostility Scale (Cook & Medley, 1954)
- Anger Inventory (Novaco, 1974)
- State-Trait Anger Expression Inventory (Spielberger, 1988)

Multidimensional measures of emotional/psychological functioning

- Minnesota Multiphasic Personality Inventory (Hathaway & McKinley, 1943)
- Symptom Checklist-90 (Derogatis, 1983)
- Millon Behavioral Health Inventory (Millon et al., 1983)
- MOS-SF-36 (Ware & Sherbourne, 1992)
- Profile of Mood States (McNair et al., 1981)

Psychiatric diagnostic interviews

- Diagnostic Interview Schedule (APA, 1994)
- Structured Clinical Interview for DSM (First et al., 1997)

Challenges

- Few measures have been specifically developed and validated for persons with pain
- Most pain intervention studies have not employed a measure of emotional functioning
- Apparent discrepancy between measures used in pharmacological versus nonpharmacological pain intervention literatures

Recommendation

- Profile of Mood States (POMS; General and specific measure of mood states)
- Beck Depression Inventory (BDI; Measure of depressive symptom severity)

Primary rationale

- POMS is the single most reliable, valid, and inclusive measure of mood states relevant to assessment of emotional distress among persons with pain;
- BUT, it is inadequate as a measure of the broader cluster of symptoms most commonly associated with emotional distress, particularly depression.
- Among the multi-symptom measures, the BDI has the strongest conceptual and empirical support

Profile of Mood States

- Designed to assess six dimensions of mood
 - Tension-Anxiety
 - Depression-Dejection
 - Anger-Hostility
 - Vigor-Activity
 - Fatigue-Inertia
 - Confusion-Bewilderment

Profile of Mood States

- 65 mood-related adjectives
- Present time (“for the past week, including today”)
- Five point Likert-type scales (0=not at all to 4=extremely)
- Simple to administer; 3-5 minutes to complete

Profile of Mood States

- Internal consistency estimates range from 0.84 to 0.95
- Stability estimates range from 0.65 to 0.74
- Face validity in pain research
 - Inclusion of somatic and cognitive items in Anxiety-Tension scale
 - Mood descriptors other than sadness in Depression-Dejection scale
 - Includes Anger-Hostility scale
 - Includes other dimensions specifically relevant to pain (Vigor, Fatigue, Confusion)
- Criterion-related validity estimates (MMPI-2) range from 0.58 to 0.69
- Responsive to change in pain medication trials

Profile of Mood States: Strengths

- Developed for use with non-psychiatric populations
- Simple to administer and brief (3-5 minutes)
- Inclusion of key dimensions of mood that are thought to be relevant for assessment of persons with pain; clear advantage over other comparable measures
- Very good to excellent reliability and stability
- Strong evidence of validity
- Responsive to change in pain intervention studies

Profile of Mood States: Limitations

- Significant intercorrelation among subscales; questionable discriminant validity
- Measure of mood state, as opposed to a more comprehensive measure of mood-related symptoms or disorder
- Limited data from non-intervention research in the pain field

Alternatives to the POMS

- MMPI-2
 - Too long!!!
 - Not designed to assess change
- SCL-90-R (and Brief Symptom Inventory)
 - Longer than POMS
 - Poorer psychometrics
 - Lack of data demonstrating responsiveness to change
- MOS-SF-36
 - Questions about discriminant validity and sensitivity to change during pain interventions
 - Too few data at this point

Decision about symptom cluster measure: Anxiety and Anger

- Among measures of anxiety, those measuring pain-related fear hold greatest potential, but they currently lack sufficient psychometric data
- Most commonly used measure is Spielberger's Anxiety Inventory, but it has no particular advantage over POMS
 - Developed for use with psychiatric populations
 - Known to be highly correlated with other measures of emotional distress
 - Lack of data from pain medication trials
- Few data to support use of any anger measure

Beck Depression Inventory

- Designed to measure the behavioral manifestations of depression in adolescents and adults
- Current version includes 21 groups of four statements relating to symptoms of depressive disorder
- Respondents report how they are feeling “right now”
- Responses in each cluster are scored numerically with a 0 to 3 representing level of severity; range for measure is 0-63

Beck Depression Inventory

- Indices of internal consistency range from 0.73 to 0.95
- Stability indices range from 0.80 to 0.90
- Validity estimates average around 0.60 for nonpsychiatric patients
- Responsive to change during psychotherapy and medication trials; including relatively large number of pain intervention trials

Beck Depression Inventory: Strengths

- Excellent psychometrics
- Subject of extensive research in the pain field
- Responsive to change in pain intervention research

Beck Depression Inventory: Weaknesses

- Not designed for use among persons with pain
- Challenges regarding relevance of somatic symptoms and potential inflation of depressive symptom severity among persons with pain

The CES-D as an alternative to the BDI

- CES-D

- Designed to screen for depressive disorder in community samples
- Stability estimates appear to be lower than those for BDI
- Validity estimates are no better than BDI, and may be particularly low among the elderly
- Although it has been demonstrated to be responsive to change during pain interventions, there are fewer data than for the BDI

Future research

- Formal meta-analysis or more comprehensive review
- Direct comparison of reliability, validity, and responsiveness to change of measures of emotional distress
- Continued development and evaluation of measures of pain-related anxiety/fear and anger/anger expression
- Direct examination of the incremental utility of including the POMS and BDI in pain intervention studies; that is, do we really need both measures?