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Battery for Health Improvement 2

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Medical Intervention Risk (MIR) Report Manual

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Chapter 1: Introduction

The ancient Greek physician Hippocrates may have anticipated the biopsychosocial model of medicine when he said: "It is more important to know what sort of person has a disease, than to know what sort of disease a person has."[1] Consistent with this, a growing body of research supports the use of a biopsychosocial approach to medical treatment that integrates medical care with psychosocial assessment and intervention.[2-5] Within this research, one of the most promising applications of the biopsychosocial model is for the treatment of pain.[6-12]

Pain is the most common reason why patients see a physician: *Something hurts.*[13, 14] In the United States alone, it has been estimated that at least 116 million adults suffer from chronic pain, with an estimated annual national economic cost of $560 to $635 billion.[15]

A recent report from the Institute of Medicine studying the problem of pain in the United States concluded that pain has biological, psychological, and social components.[15] The International Association for the Study of Pain has affirmed the biopsychosocial nature of pain and concluded that pain has a dual nature. While pain is in part a sensory process, like sight, touch, or smell, pain is also an emotional experience, like depression, anxiety, or anger.[16] At the neurophysiological level, the experience of pain is inextricably linked with physiological arousal, mood, memory, and cognition.[17] Thus, chronic pain is arguably the quintessential biopsychosocial condition.

Given the complex, biopsychosocial nature of chronic pain, a prerequisite of effective pain treatment is an accurate assessment of not only the medical aspects of pain, but the psychosocial aspects as well. One biopsychosocial inventory especially suited for the assessment of patients with chronic pain is the Battery for Health Improvement 2 (BHI™ 2).[18] Of the many reporting options available for the BHI™ 2, the Medical Intervention Risk (MIR) report is designed to specifically determine the level of several psychosocial risks present in patients that may negatively impact their response to medical treatment.

Because use of the BHI 2 MIR report assumes a degree of familiarity with the BHI 2 test, this manual provides an overview of the BHI 2, its developmental history, and details regarding its administration as appropriate. Users of the BHI 2 MIR report are encouraged to consult the BHI 2 Manual for a more comprehensive account of the test and its features. The remainder of this manual describes the MIR report itself, its development, and its use as a tool for clinicians.

BHI 2 Overview

The BHI 2 is a 217-item, self-report inventory with three validity measures, 16 clinical scales, and a multidimensional assessment of pain. It was designed for the biopsychosocial assessment of medical patients who suffer from pain or injury. (See Table 1.1 for a list of BHI 2 scales; item content can be found in Appendix A.)

Table 1.1 The BHI 2 Scales

Validity scales
Self-Disclosure
Defensiveness
Physical Symptom scales
Somatic Complaints
Pain Complaints
Functional Complaints
Muscular Bracing
Affective scales
Depression
Anxiety
Hostility
Character scales
Borderline
Symptom Dependency
Chronic Maladjustment
Substance Abuse
Perseverance
Psychosocial scales
Family Dysfunction
Survivor of Violence
Doctor Dissatisfaction
Job Dissatisfaction

Development of the BHI 2 began with a theoretical paradigm called the Biopsychosocial Vortex model.[19] The vortex model is a graphical representation of the biopsychosocial model as it pertains to the onset of injury, illness, chronic pain, and intractable biopsychosocial disorders (see Figure 1.1). Based on this model, 600 of the more than 1,100 items created for the BHI 2 were administered to a national sample of more than 2,500 subjects. Patient and community groups were identified from this sample and were used to explore the psychometric properties of the prototypical BHI 2 scales.

The prototypical BHI 2 scales were organized in accordance with the biopsychological principles as depicted in the vortex model, representing all biological, psychological, and social symptom scales. Items were then assigned to the scales based on the appropriateness of the item content and the ability of the items to differentiate one group of subjects from another, item to scale correlations, item to criteria correlations, and resultant scale to criteria correlations.

Once the final BHI 2 items and scales were determined, a sample of 1,252 subjects were used to norm the test. Patient and community normative groups were selected and stratified to approximate the U.S. Census for age, gender, race, and education. These two norm groups served as estimates of the responses of both the average American patient with pain or injury and the average American community member. From the patient norm group, six other reference groups were also identified, including subgroups for chronic pain, brain injury/headache pain, neck pain, upper extremity pain, low back pain, and lower extremity pain. Additionally, fake good and fake bad groups were obtained.

Overall, the development process produced three validity measures (Validity Index, Self-Disclosure, and Defensiveness); four "biological" scales assessing medical symptoms (Somatic Complaints, Pain Complaints, Functional Complaints, and Muscular Bracing); eight psychological measures of affect and characterological dysfunction (Depression, Anxiety, Hostility, Borderline, Symptom Dependency, Chronic Maladjustment, Substance Abuse, and Perseverance); and four measures of a patient's social environment (Family Dysfunction, Doctor Dissatisfaction, Survivor of Violence, and Job Dissatisfaction). At cross-validation, the mean test-retest stability and Cronbach's alpha of the BHI 2 scales were .93 and .84, respectively.

The development process also yielded 40 content-based subscales. Items were assigned to these subscales based on the appropriateness of the item content as determined by a panel of expert judges. The mean test-retest stability, Cronbach's alpha, and interjudge agreement regarding item content of the BHI 2 content-based subscales were .88, .69, and .92, respectively.

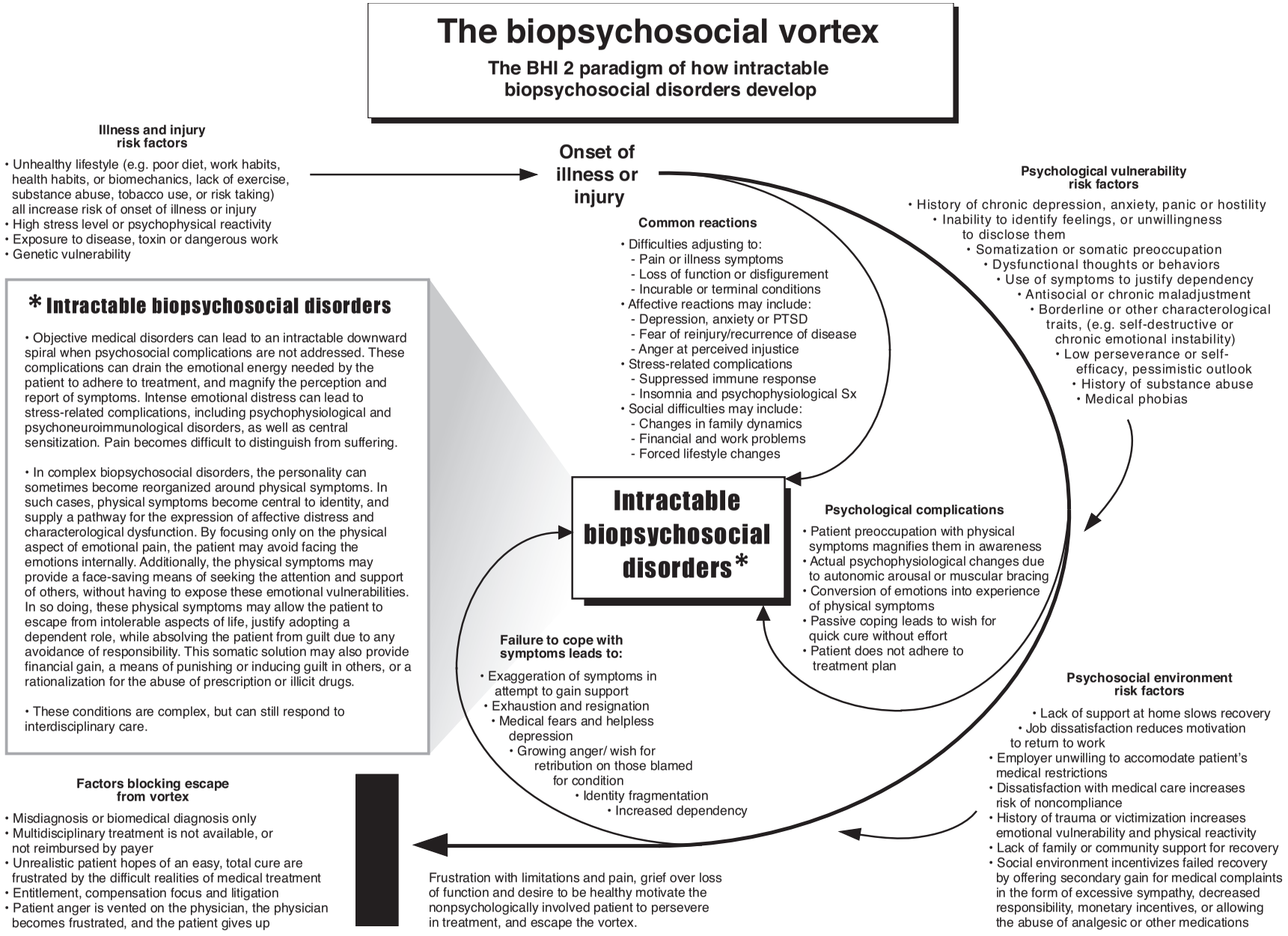

Figure 1.1 The Biopsychosocial Vortex model.

The BHI 2 Medical Intervention Risk (MIR) Report

The BHI 2 MIR report, an interpretation of the BHI 2 test, is used by professionals considering treatment or rehabilitation for their patients within a biopsychosocial context. As described in Figure 1.1, objective medical disorders can become unmanageable if psychosocial complications are not addressed. Unlike the standard BHI 2 reports (i.e., the Profile, Basic Interpretive, and Enhanced Interpretive reports), which are used in a comprehensive psychological assessment, the focus of the MIR report is to determine risk factors thought to negatively impact a patient's response to medical treatment. Specifically, the MIR report was created to assess the following five psychosocial risk factors:

1. Primary Risk
2. Presurgical Risk
3. Rehabilitation Risk
4. Addiction History Risk
5. Addiction Potential Risk

Three of the five psychosocial risk factors (Primary, Presurgical, and Rehabilitation risks) are also used to generate the Outcome Risk Level (ORL), which summarizes a patient's most prominent outcome-related risk. In addition, the MIR report measures catastrophizing and kinesiophobia, two nonadaptive coping styles that can interfere with medical outcomes. Finally, the MIR report identifies several important clinical concerns, such as suicidal and violent ideation, and the behavioral interventions that may prove helpful in ameliorating a patient's risk for medical treatment.

Uses of the BHI 2 MIR Report

The BHI 2 MIR report is intended for use by a variety of clinicians and medical specialists including psychologists, physicians, and other healthcare professionals involved in the treatment and care of injured patients. A description of areas in which the BHI 2 MIR report is especially relevant follows.

- First and foremost, the MIR report is useful for assessing a patient's readiness for surgery. It is also used to suggest treatment strategies to implement prior to surgery to increase the likelihood of a positive surgical outcome.
- The MIR report is useful in assessment and treatment planning for patients with pain or injuries who are undergoing interventional procedures.
- The MIR report is useful in assessing a patient's risk for dependency on prescribed opioids and other habit-forming medications.
- The MIR report is useful in interdisciplinary treatment settings, including physical rehabilitation and chronic pain treatment programs.
- The MIR report is useful for disability, forensic, and independent medical evaluations.
- The MIR report is useful in assessment and treatment planning for patients with chronic illnesses, as many of these patients are affected by the same risk factors as rehabilitation patients.
- Finally, the MIR report is useful as part of a more extensive psychological assessment that includes a full BHI 2 report, other psychological tests, and a clinical interview.

Limitations of the BHI 2 MIR Report

The BHI 2 MIR report provides one source of clinical hypotheses for professionals to use to explore the interrelationships between a patient's psychological and medical conditions. The MIR report is not intended to replace the clinical judgment of a trained clinician. The results should be used only by trained professionals and interpreted in the context of all other available information about the patient prior to reaching any final conclusions.