

# What really works: The evidence for behavior-based disease management for chronic medical disorders

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**“Health is a state of complete physical, mental, and social well-being, and not merely the absence of disease or infirmity.”**

Constitution of the United Nations  
World Health Organization

A review of meta-analyses\* of evidence-based documentation on the clinical effectiveness of psychosocial and mind-body therapies (MBTs) in the treatment of medical disorders was performed. The specific medical conditions reviewed include coronary heart disease, chronic pain, cancer, and geriatric depression, all of which are common in older adults. Information and statistical data regarding the clinical utility of psychosocial and MBTs were extracted and summarized. While this overview is not a comprehensive presentation of the research literature, it does indicate “what really works” in current effective practice.

## Overview

The United States Center for Medicare and Medicaid Services has calculated that 12% of Medicare beneficiaries account for 75% percent of all Medicare fee-for-service payments. Most of the older adults that account for higher health care costs experience one or more chronic medical disorders. As the population continues to age the number of individuals with chronic medical disorders and their estimated cost of care are projected to increase dramatically. (1 CMS)

This high-risk high-cost population has become the focus of disease management programs to improve health outcomes and contain costs. Disease management is defined as “a system of coordinated healthcare interventions and communications for populations with conditions in which patient self-care efforts are significant.” (2 DMAA)

Deficient self-care efforts lead to medical exacerbations and complications resulting in the need for additional medical intervention and hospitalization (see Table 1). Self-care behavior problems usually associated with chronic medical disorders include non-adherence to recommended lifestyle changes,

Table 1.

### Behavior-Based Self-Care Problems

- Alcohol and Drug Abuse
- Anxiety and Depression
- Dehydration/Under-Drinking
- Emotional Dyscontrol: Anger/Impulsivity
- Inactivity
- Insomnia/Sleep Difficulty
- Malnutrition/Under-Eating
- Medical Noncompliance
- Obesity/Over-Eating/Harmful Eating
- Pain Management
- Poor Judgment/Decision-Making
- Smoking
- Unsafe Activities of Daily Living

\* A meta-analysis is a statistical approach to integrating the findings from a large number of studies. The meta-analyses chosen were primarily based on randomized controlled trials, i.e., participants were randomly assigned to treatment or no treatment groups. All reported results are statistically significant at a minimum level of  $p < .05$ , i.e., the probability that the results are due to a chance occurrence is less than five percent.

engaging in health-risk behaviors, refusing treatment for co-morbid psychological distress, lack of knowledge of self-care skills, and poor compliance with medical treatment plans.

The extent to which a patient will engage in proper self-care behavior is determined by an interwoven matrix of psychological, emotional, cognitive, social, and cultural factors. Therefore, the successful management of chronic medical disorders is highly dependent upon effecting the mental, behavioral, and physiological changes that reduce health-risk behaviors, co-morbid psychological distress, and biological disease symptoms. Current approaches recognize that the mind and body function as an integrated system, each influencing the activity of the other. These approaches are broadly referred to as psychosocial and mind-body therapies (MBTs). These therapies provide patients with the strategies, skills, knowledge, and new behaviors to more effectively manage their chronic medical disorders.

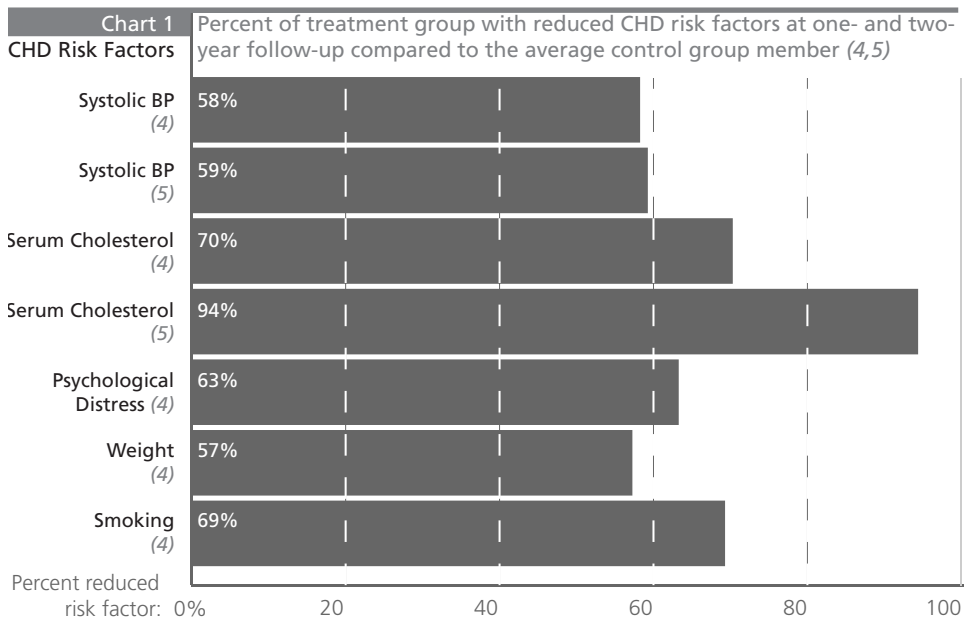
Table 2. Psychosocial and MBTs	
Cognitive-Behavior Therapy	
Behavior Therapy	
Psychodynamic Therapy	
Reminiscence Therapy	
Biofeedback Therapy	
Relaxation Techniques	
Hypnosis	
Guided Imagery	
Meditation	
Psychoeducation	

### What Really Works

In the reviewed meta-analyses, a variety of psychosocial and MBTs were used in individual or group treatment. They are presented in discrete categories in Table 2, though these techniques are often combined during treatment.

#### Coronary Heart Disease

Coronary heart disease (CHD) is the leading cause of death in the United States. Eighty-four percent of the people who die of CHD are age 65 or older. The average age of a person having a first heart attack is 65.8 for men and 70.4 for women. Within six years of a diagnosed heart attack, 18% of men and 34% of women will have a nonfatal recurrence, while 7% of men and 6% of women will experience sudden death. (3 AHA)



**Chart 1: CHD Risk Factors**

A total of 2,800 patients participated in 10 randomized controlled trials. An average of 18 treatment sessions were conducted over an average duration of 28 weeks. Treatment consisted of individual and group psychotherapeutic interventions, relaxation training, and behavior modification of risk factors for coronary heart disease. (4 Dusseldorp, et al)

Following a heart attack many patients engage in a cardiac rehabilitation program to help them return to their previous level of functioning. Cardiac rehabilitation programs often address secondary prevention, i.e., the reduction of cardiac mortality and morbidity through proper medication and risk factor modification. There has been an increasing awareness of the clinically significant impact of psychosocial and MBTs on the modification of CHD risk factors, as well as mortality and morbidity rates within this population.

In studies of nearly 6,000 patients undergoing psychosocial and MBTs in addition to standard cardiac rehabilitation, CHD risk factors were reduced for 57% to 94% of the patients treated, one to two

years following treatment. A number of patients had significant reductions in systolic blood pressure (58-59%), total serum cholesterol (70-94%), psychological distress (63%), weight (57%), and smoking (69%). At a two to ten year follow-up, the cardiac mortality of patients treated decreased 34% to 41%, while the recurrence of a nonfatal heart attack decreased 41% to 46%. (4 Dusseldorp, et al; 5 Linden, et al)

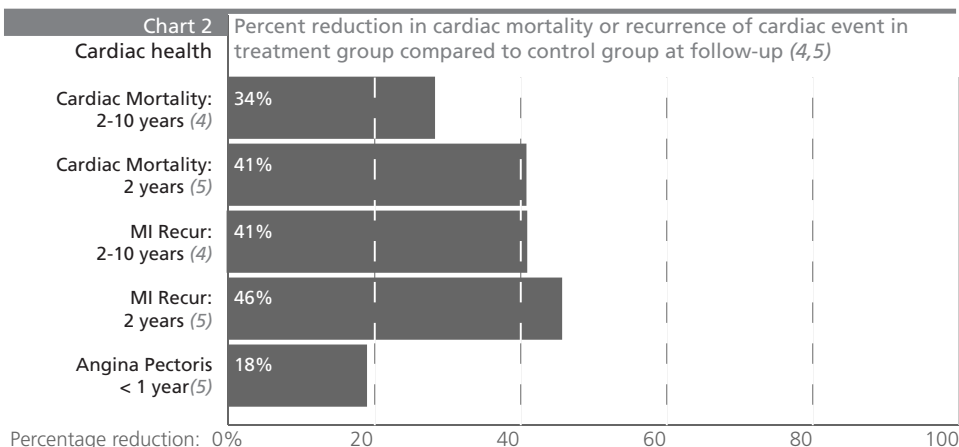


Chart 2: Cardiac Health

A total of 2,024 patients received psychosocial treatment compared to 1,156 control subjects in 23 randomized control trials. Anxiety, depression, and biological risk factors for coronary artery disease were studied. (5 Linden, et al)

These data provide strong support that psychosocial and MBTs help save the lives of CHD patients and prevent further cardiac events.

**Chronic Pain**

The experience of pain is a significant factor in the lives of many older adults. Increased physical illness associated with aging can lead to chronic pain. Chronic pain is operationally defined as pain that persists for more than 6 months. The persistence of pain over an extended period of time results in vocational, emotional, social, and interpersonal complications.

Older adults living in the community experience some pain 25% to 50% of the time. Comparatively, the prevalence of pain in long-term care settings is higher, ranging from 49% to 83%. In long-term care the four most common types of chronic pain disorders are (1) low back pain, (2) arthritis, (3) previous fractures, and (4) neuropathies. Chronic pain not only diminishes functioning and quality of life, it is also associated with increased (1) sleep disturbance, (2) depression, (3) health care costs, and (3) physical disability. Older adults with pain have a three times greater risk of disability than their pain-free counterparts. (6 Yonan, Wegener)

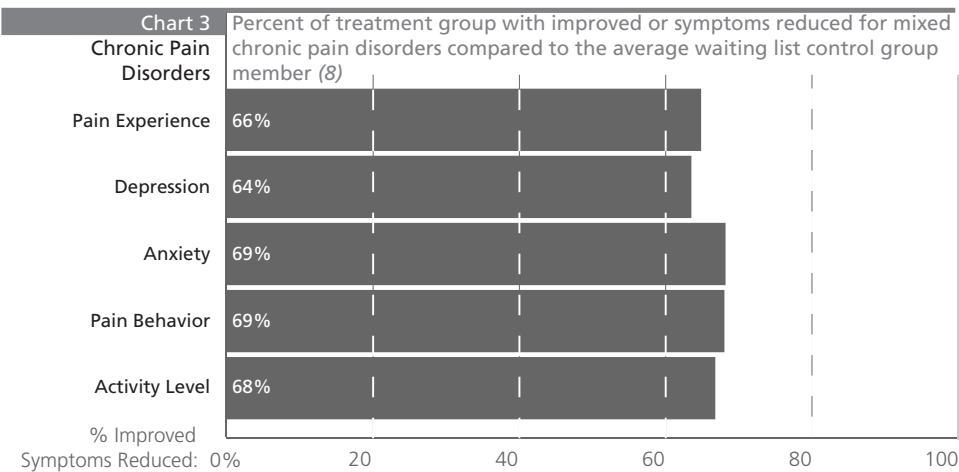
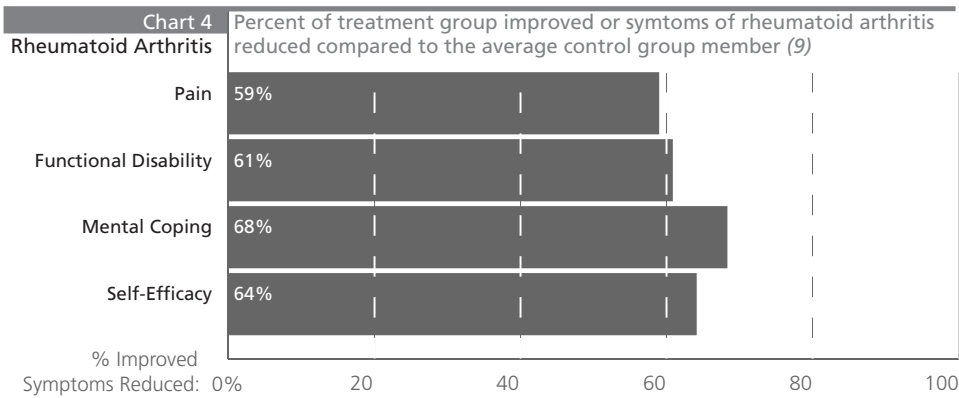


Chart 3: Chronic Pain Disorders

A total of 1,672 patients (38% male and 62% female) participated in 25 randomized controlled trials. Average age was 48 years with a 12.2 years average length of pain. Chronic pain disorders included low back pain (36%), rheumatoid arthritis (20%), mixed back pain (16%), osteoarthritis (8%), upper extremity pain (8%), fibromyalgia (4%), and unspecified pain (8%). Treatments consisted of one or a combination of cognitive-behavior therapy, behavior therapy, or biofeedback and relaxation therapy on an individual or group basis. The median number of hours in treatment was 16 (range 6 to 90) over an average treatment duration of 6.74 weeks (range of 3 to 10 weeks). (8 Morley, et al)

In studies of chronic mixed pain disorders, 66% of the patients treated with psychosocial or MBTs had a reduction in pain intensity, 63% had decreased pain behavior, and 68% had increased activity level. Depression was decreased for 64% while 69% experienced less anxiety. (8 Morley, et al) For sufferers of rheumatoid arthritis 59% had decreased pain intensity and 61% had a reduction in functional disability. Sixty-eight percent demonstrated improved mental coping and 64% had improved self-efficacy, (9 Astin, et al) i.e., "belief in one's capabilities to organize and execute the course of action required to produce given attainments." (7 Bandura) In these chronic pain studies, most participants were

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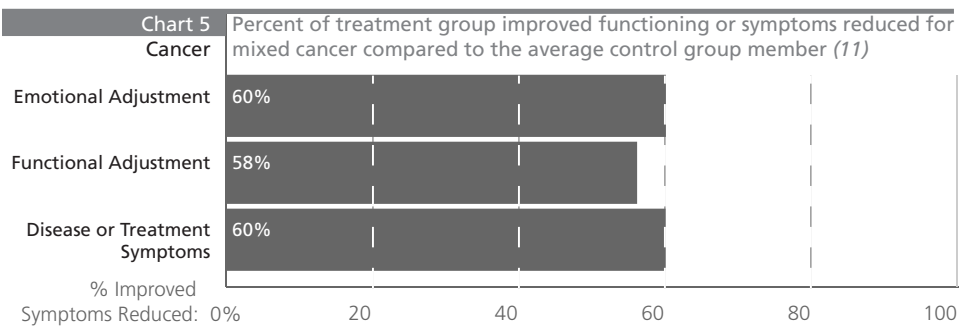


**Chart 4: Rheumatoid Arthritis**

A total of 1,676 subjects participated in 25 randomized controlled trials. All participants had rheumatoid arthritis for an average length of 10.6 years. Treatment consisted of one or a combination of cognitive-behavior therapy, behavior therapy, relaxation and biofeedback therapy, imagery, or individual and group psychotherapy. The average intervention length was 9.8 weeks (with a range of from 3 days to 9 months). (9 Astin, et al)

illness. Cancer and cancer treatment also interferes with social role functioning, e.g., ability to work or maintain family and community relationships.

Psychosocial and MBTs offer a nonpharmacological approach to managing the emotional, functional, and treatment side effects of cancer. In studies of more than



**Chart 5: Cancer**

A total of 2,840 patients participated in 45 randomized control trials. The average age of participants was in the fifties. About 60% of the participants were female. Treatment consisted of cognitive-behavioral interventions, informational, educational, and psychotherapeutic interventions, e.g., psychodynamic, existential and supportive therapy. Length of treatment was not reported. Emotional adjustment involved measures of fear, anxiety, depression, denial, self-esteem, locus of control, satisfaction with medical care, and other attitudes. Functional adjustment was defined as behavioral functioning in normal life settings, e.g., socializing and returning to work. Disease or treatment symptoms referred to chemotherapy-related nausea, vomiting, pain, coughing, and nutritional measures, including body weight. (11 Meyer, Mark)

of cardiovascular and cerebrovascular diseases, and associated mortality. Even after controlling for other documented risk factors, the relative risk of mortality following a MI was 3.5 times greater in patients with depression. Similarly, over a six year period the rates of stroke were 2.3 to 2.7 times greater for persons with high levels of depressive symptoms. (12 Roose, et al) Depression is a co-morbid and independent risk factor in these medical illnesses.

In studies involving nearly 1,000 older adults, 78% to 91% of participants had a significant reduction in depressive symptoms following psychosocial treatment. For major depressive disorders 75% of the participants improved. (13 Gerson, et al; 14 Scogin, McElreath)

already receiving standard medical care, e.g., pain or anti-inflammatory medication. The addition of psychosocial and MBTs to their treatment plan provided a clinically significant improvement.

**Cancer**

Each year, more than a million new cancer cases are diagnosed. Sixty-two percent of these cases are expected to survive at least 5 years. (10 ACS) Over the past two decades cancer treatment has become more aggressive, requiring patients to cope with nausea, vomiting, pain, and coughing in addition to the fear, anxiety, and depression that accompanies a life-threatening

2,800 people, 60% had improved emotional adjustment, 58% had improved functional adjustment, and 60% had reductions in disease-treatment related symptoms, e.g., nausea, vomiting, pain, coughing, and lower nutritional status. (11 Meyer, Mark)

**Geriatric Depression**

Older adults with chronic or acute medical disorders have a higher incidence of co-morbid depression than their counterparts. For example, after a myocardial infarction (MI) 15% to 25% of patients experience a major or minor depression. New evidence suggests that depression is also an independent risk factor that contributes to the development

**Conclusions**

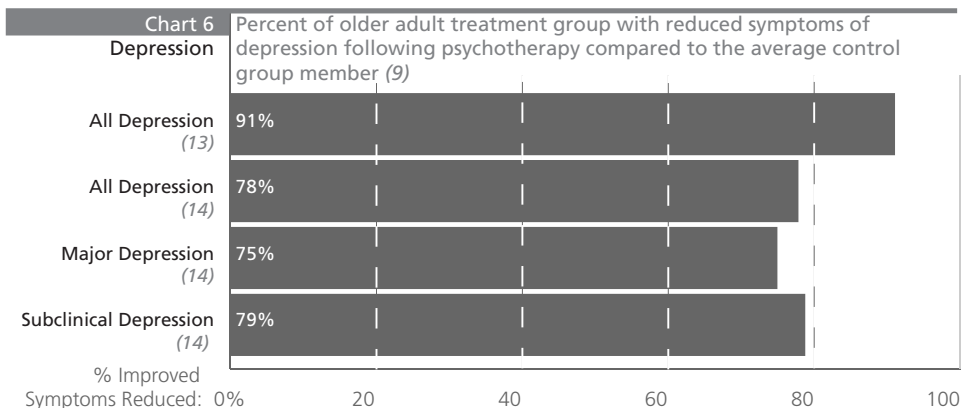
The cumulative evidence presented lends strong support for the clinically significant effectiveness of psychosocial and MBTs in the treatment of the chronic medical disorders reviewed.

Psychosocial and MBTs have a demonstrated impact on coronary heart disease, the leading cause of death in the United States. There was a significant and enduring reduction in the CHD risk factors of systolic blood pressure, total serum cholesterol, psychological distress, weight, and smoking. Patients that have undergone these treatments live longer and have fewer recurring cardiac problems. The implications for the long-term community are overwhelmingly positive, as residents have extended, healthier lives with fewer medical complications.

Chronic pain afflicts up to 83% of residents in long-term care settings, who then are three times more likely to become disabled. Psychosocial and MBTs contribute to maintaining a resident's mental and physical abilities by decreasing pain intensity, functional disability, psychological distress, and pain behavior, as well as increasing activity level, mental coping, and self-efficacy. These benefits are in addition to the benefits provided by standard medical care. The long-term care community also benefits as residents are more active, functional, and require less medical attention.

More and more people survive the disease of cancer, but fall prey to the physical, emotional, and functional effects of having sustained a life-threatening illness and the aggressive treatment to bring it to remission. Psychosocial and MBTs have demonstrated clinical effectiveness in decreasing symptoms associated with cancer and the side effects of treatment, including nausea, vomiting, coughing, pain, and nutritional status, and increasing emotional and functional adjustment.

Depression is traditionally thought of as a reaction to or consequence of one or



more life-stresses, including chronic medical disorders. However, not only can depression be an independent biological disorder, it is also an independent risk factor for the development or recurrence of cardiovascular and cerebrovascular diseases and associated mortality. Psychosocial and MBTs have shown outstanding results in the treatment of major and minor depression in older adults. The successful treatment of geriatric depression improves both the mental and physical health of residents in the long-term care setting.

**Chart 6: Depression**

A total of 220 subjects (70% women) participated in 4 randomized control trials. The average age of participants was 67 while the minimum age was 55. Treatment consisted of cognitive-behavioral, behavioral, or psychodynamic therapy. The average duration of treatment was 14.6 weeks (range: 6 to 37 weeks). The Hamilton Rating Scale for Depression was used as the measure of treatment effect. (13 Gerson, et al)

A total of 773 older adults participated in 17 randomized control trials. The average age of the participant was 70.5 years old with an average gender distribution of 57% female and 43% male. Participants with major depression, mixed clinical and subclinical depression were included. Treatment consisted of cognitive therapy, behavioral therapy, interpersonal and psychodynamic therapy, reminiscence therapy, or eclectic treatment on an individual or group basis. The average number of treatment sessions was 12 (range: 5 to 46). Common measures of treatment effect were the Hamilton Rating Scale for Depression and the Beck Depression Inventory. (14 Scogin, McElreath)

Psychosocial practices and MBTs are not the province of any one profession. Psychologists, nurse practitioners, social workers, and psychiatrists are skilled in the practice of one or more of these therapies. Within a disease management model these professionals work as one part of an integrated health care team, providing evidence-based care.

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Reprints of these monographs are available on request:

Monograph 1, *The metrics of care and cost in long-term care facility operations relative to psychological health of residents*

Monograph 2, *Advancing the physical well-being of older adults: Mental health and primary care*

Monograph 3, *Medical cost offset and behavior health*

Monograph 4, *Psychotropic medication use in long term care*

VeriCare (formerly Senior Psychology Services) is a national provider of mental and behavior health services, primarily to long-term care facilities. After twelve years, it has become the largest such service with over 900 client facilities. VeriCare employs over 200 psychologists, psychiatrists, social workers, and other qualified professionals in six states.

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