THE EFFECTIVENESS OF USING EXERCISE TO TREAT DEPRESSION

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Introduction

Depression has become a common medical issue in the United States, but conventional treatments generally have not been successful in preventing recurrence of this mental illness. Approximately ten percent of the adult population in this country is afflicted with depression at any point in time, with twenty percent of adults experiencing a major depression episode at some point in their lives (Pollock, 2001). Depressive symptoms are exhibited in roughly 50% of adults at some point in their lives, while between 50% and 60% of depression patients completing conventional treatments experience a recurrence of the disease (Pollock, 2001). Around the world, depression comprises the fourth leading disability cause and results in billions of dollars in medical and time-loss expenses (Blumenthal et al., 1999).

Conventional treatments for depression generally include medications, psychotherapy, and/or problem-solving skills training. While these treatments can be quite effective in the long-term, depending on individual circumstances, supplemental treatments are called for by the high rate of recurrence. Additionally, conventional treatments can take weeks, even months, to render a beneficial effect, leaving short-term treatment nonexistent without another approach. Side effects of antidepressant medications are a further concern, based on individual physical and mental health status.

Exercise can provide a viable treatment option for depressed individuals, whether as an alternative treatment strategy to conventional treatments or as a supplemental strategy, either in the short-term or long-term. Research to date, while limited in some instances by low numbers and study design issues, almost universally supports the use of exercise in some form as a
positive treatment option for individuals suffering from mild, moderate, or major depression. While further research on the effectiveness of exercise as a depression treatment protocol is indicated, the implication of research to date is an undeniable call for incorporation of exercise prescription into any depression treatment regimen, subject to individual evaluation.

Depression

While a number of depression measures exist to clinically diagnose the illness within psychiatric and psychological circles, perhaps the most commonly accepted are the Diagnostic and Statistics Manual of Mental Disorders (DSM IV-R) and the International Classification of Mental and Behavior Disorders (ICD-10), both of which utilize specific diagnostic criteria to define depression (Faulkner & Biddle, 2004). Among the common depressive symptoms are a depressed mood almost throughout each day, suicidal thoughts or attempts, insomnia, significant weight loss or gain without purposeful effort, low energy or fatigue, inability to remember or concentrate, decreased appetite, diminished interest in everyday pleasurable activities, feelings of worthlessness, and loss of sexual interest (Blumenthal et al., 1999).

Frequently depression goes undiagnosed, as individuals may hide their illness with drugs or alcohol. Depression can also complicate other medical conditions such as diabetes, work injuries, or musculoskeletal problems, and can be closely associated with anxiety, stress, and other psychological conditions (Pollock, 2001).

Conventional Treatments for Depression

A number of different medications are commonly used to treat depression, but the side effects can be significant. Antidepressants prescribed most often are in a medication class called selective serotonin reuptake inhibitors (SSRIs), which include the following side effects: nausea, diarrhea or constipation, insomnia or tiredness, anxiety or nervousness, decreased libido and
abnormal ejaculation, and dry mouth (Brosse, Sheets, Lett, & Blumenthal, 2002). Other medication classes include tricyclic antidepressants (TCAs) and monoamine oxidase inhibitors (MAOIs), which include the same side effects as SSRIs, along with the following: cardiac arrhythmia, increased blood pressure, weight gain, and gastrointestinal disturbances (Brosse et al., 2002). Further, TCAs can be fatal if taken as a suicide attempt, leading to the preference for SSRIs (Brosse et al., 2002).

Nonmedication treatments reflecting positive treatment results include certain herbal remedies, psychotherapeutic counseling, and training in problem-solving skills, although research studies on these treatments are incomplete at best (Craft, 2005). Unfortunately, studies of nonmedication treatments are limited by the danger of withholding medication for study purposes—a tactic that could result in study participant suicide attempts. High recurrence rates of depression leads to the conclusion that most conventional treatments represent only partially effective solutions to the disease (Trivedi, Greer, Grannemann, Chambliss, & Jordan, 2006).

Exercise as Treatment for Depression

Exercise has been shown in a number of studies to prove beneficial in the treatment of depression or depressive symptoms. Further, exercise has many positive, and very few negative, side effects from a health standpoint and generally represents a very inexpensive treatment option. In the context of treating adult depression or its symptoms, little difference exists between anaerobic and aerobic exercise programs (Smith, 2006), and the flexibility to engage in a variety of exercises tailored to individual desires is almost limitless.

Bartholomew, Morrison, & Ciccolo (2005) showed that a single incidence of exercise can have a positive effect on mood in the short-term for patients with major depressive disorder (MDD), a significant result given the delay in the effectiveness of medication or psychotherapy
options. Dunn, Trivedi, Kampert, Clark, & Chambliss (2005) found that maintaining the intensity and frequency of exercise recommended by most public health agencies (i.e., at least three days a week for at least thirty minutes a day) was sufficient to provide a significant reduction in MDD symptoms. Harris, Cronkite, & Moos (2006) conducted a 10-year study of over 400 depression inpatients and found that physical activity is associated both with less depression and also with a reduction in other physiological problems and life stressors. Richardson et al. (2005) conducted a review of available research to date and concluded that exercise is not only a valuable benefit to individuals with depression, but it is also just as effective as medication and psychotherapy in treating the disease. This review further concluded that benefits to self-esteem and social interactions were evident with exercise. Berlin, Kop, & Deuster (2006) reversed the process and studied the impact of exercise withdrawal, discovering that such action resulted in significantly higher depressive moods, fatigue, and sadness than if exercise were continued. Berlin et al. (2006), seeking an explanation for the benefits of exercise on depression, further concluded that, similar to the impact of antidepressant medications on the adult hippocampus, exercise causes neurogenesis through the enhancement of four molecules (including endorphins), counteracting the impact of MDD.

Studies in other parts of the world confirmed the positive benefits of exercise in treating depression or its symptoms, including Australia (Sims, Hill, Davidson, Gunn, & Huang, 2006), Germany (Knubben et al., 2007), Hong Kong (Tsang, Fung, Chan, Grace, & Chan, 2006), Norway (Bodin & Martinsen, 2004), and Thailand (Nabkasorn et al., 2006).

Sjosten & Kivela (2006) reviewed thirteen prior studies focused on the effect of exercise in treating depression in the elderly. While the authors concluded many of these studies contained design shortcomings, which limited conclusions as to long-term impact, the short-term
The Effectiveness of mental exercise in reducing depressive symptoms in older adults was clear. Larun, Nordheim, Ekeland, Hagen, & Heian (2006) reviewed sixteen studies focused on the effect of exercise as a treatment for depression and anxiety in young people (under the age of 20). Again, study shortcomings (such as limited participant numbers or control design) were noted, but indications of reduced depressive symptoms with exercise were pronounced.

The additional benefits of exercise to individuals suffering from depression include stress reduction, better attitude, improved outlook, self-confidence, and mental well-being (Harris et al., 2006). Well-documented physiological benefits can be realized from exercise, as well, including cardiovascular improvement, musculoskeletal gains, and improved digestive function (Harris et al., 2006).

**Implications and Conclusions**

While further studies are implicated based on certain limitations in studies to date, the benefits of exercise are undeniable and should be incorporated into any depression treatment plan. No one plan will work for every patient, so practitioners must tailor exercise treatment to overcome barriers to exercise (e.g., intimidation or cost), account for physical limitations, and develop strategies for successful compliance by the patient (e.g., setting reasonable goals and preparing for setbacks or obstacles) (Pollock, 2001).

Whether exercise is used as a first-line treatment or supplemental to medication or psychotherapy, patients have virtually nothing to lose and much to gain from adopting an exercise approach to dealing with depression or its symptoms. The goal should be a treatment regimen to reduce depressive symptoms and increase self-worth and energy, with adherence by the patient for the continuity of benefits to overall health and wellness.
References


