

Exercise and Pharmacotherapy in the Treatment of Major Depressive Disorder

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FROM ABSTRACT:

Objective:

To assess whether patients receiving aerobic exercise training performed either at home or in a supervised group setting achieve reductions in depression comparable to standard antidepressant medication (sertraline [Zoloft]) and greater reductions in depression compared to placebo controls.

Methods:

Between October 2000 and November 2005, we performed a prospective, randomized controlled trial with allocation concealment and blinded outcome assessment in a tertiary care teaching hospital. A total of 202 adults (153 women; 49 men) diagnosed with major depression were assigned randomly to one of four conditions:

- 1) Supervised exercise in a group setting
- 2) Home-based exercise
- 3) Antidepressant medication (sertraline, 50–200 mg daily [Zoloft])
- 4) Placebo pill for 16 weeks

Patients underwent the structured clinical interview for depression and completed the Hamilton Depression Rating Scale (HAM-D).

Results:

After 4 months of treatment, 41% of the participants achieved remission, defined as no longer meeting the criteria for major depressive disorder and a HAM-D score of 8.

Patients receiving active treatments tended to have higher remission rates than the placebo controls:

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|------------------------|-----|
| 1) Supervised exercise | 45% |
| 2) Home-based exercise | 40% |
| 3) Medication | 47% |
| 4) Placebo | 31% |

Conclusions:

The efficacy of exercise in patients seems generally comparable with patients receiving antidepressant medication and both tend to be better than the placebo in patients with major depressive disorder.

Placebo response rates were high, suggesting that a considerable portion of the therapeutic response is determined by patient expectations, ongoing symptom monitoring, attention, and other nonspecific factors.

THESE AUTHORS ALSO NOTE:

“Major depressive disorder is a significant health problem with a lifetime prevalence of 15% to 20%.”

Major depressive disorder is the fourth leading cause of disability-adjusted life-years worldwide.

It is projected that by the year 2020 major depressive disorder will be second only to coronary heart disease as a cause of illness burden worldwide.

There is great interest in the development and evaluation of alternative therapies for major depressive disorder.

Physical exercise is a therapy for the treatment of major depressive disorder that has received considerable attention.

A number of studies have shown that aerobic exercise and resistance training reduce depressive symptoms in patients diagnosed with major depressive disorder.

“A previous study from our research group demonstrated that exercise was equally effective as antidepressant medication in reducing depressive symptoms in 156 older patients with major depressive disorder.”

In this study, the exercise prescriptions were identical in the supervised group and the home exercise group. The only difference between the groups was the setting in which the exercise occurred.

The present study compared the effects of supervised group exercise, home-based individual exercise, and an established antidepressant medication (sertraline [Zoloft]) with placebo in a relatively large sample of middle-aged and older adults diagnosed with major depressive disorder. It was a randomized and 16 weeks in duration. Eligibility criteria included age 40 years, presence of major depressive disorder, no current involvement in regular exercise, and no current psychiatric treatment.

Depression assessment was done primarily by using the 17-item Hamilton Depression Rating Scale.

Exercise testing was done by using a graded treadmill to document the patients' fitness levels and establish an exercise training prescription for those patients subsequently randomized to exercise.

Participants were assigned randomly in equal proportions to supervised aerobic exercise, home-based aerobic exercise, Zoloft, or placebo.

Patients in the supervised aerobic exercise condition attended three supervised group exercise sessions per week for 16 weeks at training ranges between 70% to 85% maximum heart rate for 30 minutes by walking or jogging on a treadmill. These subjects also had a 10-minute period of warm up and a 5-minute period of cool down.

Participants in a home-based exercise program received the same exercise prescription but exercised at home on their own with minimal contact from the study staff.

RESULTS

The exercise groups displayed significantly higher levels of aerobic capacity compared with placebo and medication pill conditions.

The remission rates for major depressive disorder were:

Zoloft	47%
Supervised exercise	45%
Home-based exercise	40%
Placebo	31%

31% of patients receiving Zoloft reported worse post-treatment diarrhea and loose stools.

DISCUSSION

"These results confirm and extend previous findings that exercise is comparable to antidepressant medication in the treatment of patients with major depressive disorder."

"In our previous study, 56% of patients receiving [Zoloft] and 47% assigned to supervised exercise were in remission after 4 months of treatment and all patients achieved significant and comparable reductions in depressive symptoms."

"Our overall findings are generally consistent with several meta-analytic reviews that suggested that exercise may be an effective treatment for depression."

"There was no difference in remission rates between patients who exercised in a supervised group setting and those who exercised on their own."

"The present findings suggest that, for this patient population, supervised exercise yields better outcomes than home exercise with respect to physical conditioning, but that both seem equally effective in achieving remission of clinical depression."

KEY POINTS FROM DAN MURPHY

- 1) This 16-week study involving patients with major depressive disorder revealed the following:
 - A)) 47% have remission of their symptoms by taking the drug Zoloft.
 - B)) 45% have remission if they engage in supervised aerobic group exercise program. The program consisted of walking or jogging on a treadmill for 10 minutes of warm-up, 30 minutes with their heart rate between 70% to 85% maximum heart rate, and 5 minutes of cool down.
 - C)) 40% have remission if they engage in the same exercise program as the supervised group, but done at home without supervision or group involvement.
 - D)) 31% have remission if they take a placebo pill.
- 2) "The efficacy of exercise in patients seems generally comparable with patients receiving antidepressant medication and both tend to be better than the placebo in patients with major depressive disorder."
- 3) "Major depressive disorder is a significant health problem with a lifetime prevalence of 15% to 20%"
- 4) Major depressive disorder is the fourth leading cause of disability-adjusted life-years worldwide.
- 5) It is projected that by the year 2020 major depressive disorder will be second only to coronary heart disease as a cause of illness burden worldwide.
- 6) A number of studies have shown that aerobic exercise and resistance training reduce depressive symptoms in patients diagnosed with major depressive disorder.
- 7) The largest treatment side effect was 31% of patients receiving Zoloft reported worse post-treatment diarrhea and loose stools.
- 8) "Our overall findings are generally consistent with several meta-analytic reviews that suggested that exercise may be an effective treatment for depression."