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COMMENTARY

The Evidence Is Clear, Exercise Is Not Better Than Antidepressants or Therapy: It Is Crucial to Communicate Science Honestly

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"Exercise is 1.5 times more effective than either medication or cognitive behavioral therapy"; a misleading headline that has been widely disseminated to millions across news outlets, podcasts, videos, and blogs. This claim erroneously arose through the comparison of effect sizes from "very low quality" previous systematic reviews of physical activity interventions for mental health.[1] Given the overlapping 95% CIs and substantially methodologically superior systematic reviews the authors used as a comparison, they made a more accurate statement that exercise is "comparable to or slightly greater" (in mild symptoms).

In addition to not being supported by the authors' own paper, this statement is not supported by existing comparative trials or network meta-analyses wherein, at best, there is equivalence of efficacy between exercise interventions and medications or therapy.[2–4] Not only is claiming exercise to be more effective than other first-line treatment options false and misleading, but it is damaging to the reputation and credibility of those in the exercise and mental health field.

It is imperative that robust science is communicated widely, but this needs to be done in the interest of science and, in this case, patients. As the media is known to play a crucial role in influencing people's perception and behaviors, it is imperative that dissemination of scientific information is both clear and accurate. Previous research has demonstrated that subtle misinformation in news headlines, such as the claim that exercise is more effective than medication or therapy, can affect readers' memory, inferential reasoning, and behavioral intentions.[5] Furthermore, readers struggle to update their memory to correct initial misconceptions, which highlights the importance of factual messaging to the general public.[5] This is particularly important when it is considered that there is already significant stigma surrounding the use of psychotropic medications such as antidepressants.[6] Thus, wide dissemination of the nonevidence-based claim that exercise is 1.5 times better than other first-line treatments may lead to direct harm to vulnerable patients, who may delay seeking specialist support or stop taking medications or stop attending therapy due to such headlines. Prior evidence has demonstrated that a greater delay to treatment of a depressive episode is associated with a reduced response and may precede development of a treatment-resistant depression.[7] Furthermore, for those already taking an antidepressant medication, abrupt discontinuation without physician supervision can lead to withdrawal effects characterized by dizziness, weakness, nausea, headaches, and insomnia, among others. Moreover, media claims often fail to mention that the evidence for exercise in depression lies mostly in the mild to moderate cases; therefore, those with severe depression may be experiencing extreme distress warranting immediate medical attention (ie, due to active suicidal ideation or malnutrition due to severely reduced intake).

So what does the evidence actually show? A recent 2023 meta-analysis of randomized controlled trials found that exercise decreased depressive symptoms with large effects (standardized mean difference = –0.946; 95% CI, –1.18 to –0.71), with an impressive number needed to treat of 2.[8] From this, exercise has been adopted in national guidelines for the treatment of mild to moderate depression as a first-line monotherapy.[9] However, when compared with antidepressants, a recent 2022 network meta-analysis of randomized controlled trials found no difference between exercise and pharmacological interventions in reducing depressive symptoms in adults with nonsevere depression.[2] This finding was later replicated in a 2023 comparative trial between antidepressants or running therapy, which found that both had comparative effects on remission of depression.[4] When compared with internet-based cognitive behavioral therapy, exercise had nonsuperior effects in the treatment of mild to moderate depression.[3] Although these findings reinforce that exercise is, at best, equivalent to antidepressants or therapy, this does not mean that these modalities need to be used in isolation for the treatment of depression. In fact, exercise used as an add-on to antidepressants and therapy has demonstrated improved efficacy.[10] As such, exercise is one of several tools available to help patients treat their depression, and an informed discussion is essential to determine patient preference.

Does this mean that exercise, medications, and therapy are all the same in the treatment of depression? The short answer is no. Beyond its antidepressant effects, exercise has numerous multisystem benefits, which are often in contrast to the adverse side effects of antidepressant medications. Namely, exercise is known to improve weight, waist circumference, blood pressure, heart rate, and heart rate variability, among others, whereas antidepressants have several associated side effects, such as weight gain, fatigue, and sexual dysfunction.[4] As such, exercise has the unique ability to simultaneously bolster one's mental and physical health. Despite these beneficial multisystem effects and higher adverse events in antidepressant trials, there is a higher drop-out rate for exercise interventions.[2] This likely arises from the fact that exercise is physically demanding and more difficult to implement when compared with pharmacological interventions such as antidepressants. This places an onus of responsibility on the health care provider to develop an understanding of the benefits of exercise,

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address barriers, provide clear exercise "prescriptions," and incorporate behavioral change techniques to increase initiation and adherence.

In conclusion, although exercise can have comparable effects to antidepressants or therapy in cases of mild to moderate depression, this perspective is less helpful for the practicing clinician, whose goal is achieving remission in all patients over time. Just as it would be incorrect to claim that 10 to 12 sessions of cognitive behavioral therapy result in full remission of depression, it is equally misguided to suggest that exercise alone can resolve deeply complex mental health issues. In practice, clinicians achieve long-term remission by guiding patients through extended therapy, thoughtful medication management, and fostering the habit of consistent exercise.

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