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## Effects of exercise on psychological caseness and psychosocial predictors of responses in people with cancer

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**Background:** Exercise is a potent non-pharmacological treatment to reduce anxiety, depression, and overall psychological distress. However, evidence in oncology remains less clear, with inconsistent findings across cancer types, treatment status, and psychological disorders, partly attributable to a floor effect.

**Purpose:** To investigate the effects of exercise on anxiety, depression, and overall psychological distress in people with clinically relevant distress (“cases”) and to identify psychosocial predictors of responses.

**Methods:** The analysis included participants in a community exercise oncology program (Life Now Exercise) across Western Australia, who met the criteria for psychological caseness, defined as a Global Severity Index  $\geq 48$  on the Brief Symptom Inventory-18. Individually tailored resistance, aerobic, and flexibility exercises were delivered twice weekly in a group format for 3 months, supervised by accredited exercise physiologists. All participants were followed up for 6 months, with continuation of the program optional during this period. Anxiety, depression, and overall psychological distress were assessed at baseline, post-program, and 6 months post-program using the Brief Symptom Inventory-18.

**Results:** A total of 397 cases were included, of which 61% were aged under 65 years, 42% had breast cancer, 87% had non-metastatic disease, and 66% were undergoing cancer treatment. Adjusted mixed-model analyses demonstrated improvements at post-program in anxiety (-3.1 [95% CI, -4.1 to -2.1]), depression (-2.9 [95% CI, -3.9 to -1.9]), and overall psychological distress (-3.6 [95% CI, -4.4 to -2.7]). The improvements were preserved at 6 months post-program. Further, the effects did not differ by treatment status or staging. Marital status (partnered vs. non-partnered: -2.5 [95% CI, -4.85 to -0.15]) and baseline core self-evaluation score ( $P \leq 0.05$ ) predicted the program effects on anxiety.

**Conclusion:** Exercise is effective in reducing psychological burden in patients with psychological caseness. Partnered patients and those with lower baseline core self-evaluations tend to have a greater magnitude of improvement.

### Keywords

exercise, cancer, anxiety, depression

### Conflict of Interest & Ethical Approval

yes

### Abstract submitters declaration

yes

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