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Short- and Long-Term Effects of Supervised and Home-Based Lifestyle Interventions on Quality of Life and Cardiorespiratory fitness in Breast Cancer Survivors: Results from the MOVIS Trial

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Background:
Breast cancer survivors (BCS) often experience impaired quality of life (QoL) due to treatment-related side effects, sedentary behaviour and suboptimal diet. The Movement and Health Beyond Care (MoviS) trial (NCT04818359) investigates lifestyle interventions combining psychological counselling, aerobic exercise and Mediterranean diet (MD).
Methods:
A total of 139 sedentary Italian BCS (52.6 ± 7.8 years) were included in the trial, from February 2020 to December 2025. The first 30 women, recruited during the COVID-19 pandemic, were analysed as the MoviS COVID Group (MCG; n=30) and received a 3-month home-based program with remotely supervised exercise adapted to restrictions. After the pandemic wave, 109 women were randomized to an intervention group (IG; n=53) or a control group (CG; n=56). All participants received baseline physical activity and MD recommendations; the IG additionally completed a 12-week supervised aerobic training program (3 sessions/week, 40–70% HRR). QoL (EORTC QLQ-C30), cardiorespiratory fitness ($\dot{V}O_2max$) and MD adherence (Mediet) were assessed at 3, 6, 12 and 24 months.
Results:
In the MCG, the home-based intervention produced improvements in emotional, cognitive and social functioning, maintained up to 24 months. These were accompanied by increases in MD adherence (T4 vs T0: +18.62%, $p<0.01$) and $\dot{V}O_2max$ (+7.04%, $p<0.01$). In the randomized cohort, the IG showed significant post-intervention improvements versus CG in physical functioning ($p<0.05$), social functioning ($p<0.05$), QLQ-C30 Summary Score ($p<0.05$) and $\dot{V}O_2max$ ($p<0.01$), with modest gains persisting at 6–12 months. MD adherence increased at 3 and 12 months in both groups, optimal long-term adherence was not reached.
Conclusions:
Across 139 BCS, supervised and home-based lifestyle interventions were effective in enhancing QoL, with supervised exercise providing additional fitness benefits. An approximate +1 MET (~3.5 $mL \cdot kg^{-1} \cdot min^{-1}$) increase over 3 months—a clinically meaningful threshold associated with reduced mortality—was linked to superior long-term QoL and cardiorespiratory fitness at 24 months.

Keywords

Breast Cancer Survivors, Aerobic exercise, Quality of Life, Cardiorespiratory fitness

Conflict of Interest & Ethical Approval

yes

Abstract submitters declaration

yes

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