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Feasibility Trial Protocol Evaluating Workforce Models for Delivering Supervised RT-HIIT During Chemotherapy in Regional Cancer Centres

Background
Despite strong evidence supporting exercise during chemotherapy, access to supervised programs remains limited in regional settings due to workforce and service delivery constraints. Scalable models that maintain safety, fidelity, and clinical effectiveness across diverse healthcare contexts are urgently needed.
Purpose
To evaluate the feasibility, safety, and implementation of delivering supervised combined resistance and high-intensity interval training (RT-HIIT) during curative-intent chemotherapy across regional cancer centres using three distinct workforce delivery models, explore physiological responses, and monitor external workload across sessions.
Methods
This multi-site, parallel-group, randomised controlled feasibility trial will recruit 66 adults with stage I–III solid tumours undergoing chemotherapy across three centres in Western New South Wales. Participants will be randomised to 12 weeks of supervised RT-HIIT plus usual care or usual care plus a brief exercise education session. The intervention comprises twice-weekly supervised sessions integrating resistance training and cycle-based HIIT (RPE 16–18/20, Borg scale). Sites represent three distinct delivery models: AEP-led, hybrid AEP–allied health assistant-led, and allied health assistant-led with remote AEP supervision. Primary outcomes include recruitment, adherence, retention, adverse events, acceptability, and fidelity, assessed against predefined progression criteria. Secondary exploratory outcomes include relative dose intensity, body composition, physical function, and patient-reported outcomes, with perceived exertion, heart rate, and workload monitored across sessions.
Results
The trial is expected to demonstrate that supervised RT-HIIT can be delivered safely with acceptable adherence and fidelity across delivery models. Comparative feasibility will identify implementation barriers and enablers, while exploratory data will inform future trial design and characterise patterns between perceived exertion, heart rate, and workload across repeated sessions and delivery models.
Conclusion
This study addresses a critical implementation gap in exercise oncology in regional cancer settings. Findings will inform the design of definitive trials and support the development of sustainable, scalable models for effectively embedding evidence-based exercise within routine regional cancer care pathways.

Keywords

Regional cancer care; High-intensity interval training; Resistance training; Workforce delivery models; Feasibility trial.

Conflict of Interest & Ethical Approval

yes

Abstract submitters declaration

yes

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