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Bridging Care Settings: A Partially Standardized and Individualized Exercise Approach to Improve Adherence in Pediatric Oncology (BEPPO Study)

Background: Children undergoing cancer treatment exhibit significantly reduced physical activity, contributing to declines in physical function and quality of life during and after medical treatment. Despite guideline recommendations, exercise interventions are not sufficiently implemented into standard care, and consistent delivery is challenged by the varying inpatient and outpatient settings and wide referral areas; and health insurance companies generally do not cover the costs. The BEPPO study evaluates the effectiveness of a structured, individualized, and cross-sectoral exercise intervention program designed to guarantee continuous support and improve patient-related outcomes in pediatric oncology.

Methods: This multicenter RCT will include n=346 pediatric patients (aged 3-18 years) within 6 weeks after cancer diagnosis. Participants in the intervention group (n=173) receive a 6-month individualized exercise program delivered across inpatient, outpatient, and home settings, including telemedical supervision with the goal of 3–5 sessions per week. Adherence is promoted through proactive contact strategies, flexible delivery formats, and four structured movement counseling sessions. These counseling sessions aim to strengthen the therapeutic alliance, address individual barriers to participation, and foster intrinsic motivation for sustained engagement. A key innovation of the present approach is the integration of standardized training principles with individualized determinants. Each training session is structured around a specific goal and grounded in established principles of sports science. Concurrently, individual interests, current health status, as well as motivational and psychological factors are systematically considered to enhance participant adherence, practical feasibility, and consequently the overall effectiveness of the intervention.

Conclusion: This study introduces a novel model of targeted exercise intervention in pediatric oncology by integrating A) continuous care, B) structured training principles meeting individualized approaches, and C) counseling-based support to improve adherence. Improvements in physical performance, treatment-related side effects, and quality of life are anticipated. The findings may support the sustainable integration of exercise therapy into routine oncological care.

Keywords

pediatric oncology; exercise intervention; adherence; standardization

Conflict of Interest & Ethical Approval

yes

Abstract submitters declaration

yes

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