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Exercise Interventions Targeting Physical Fitness, Cardiovascular Outcomes and Body Composition in Early Adulthood Obesity: A Systematic Review

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ABSTRACT

Introduction: Obesity during early adulthood is a growing public health concern, strongly associated with an increased risk of developing chronic conditions such as cardiovascular disease, reduced physical functioning, and unfavorable body composition. A clearer understanding of these outcomes is essential to optimise prevention and treatment strategies for obesity-related complications in this age, which is determined by different modes of exercise in this systematic study.

Aim: This systematic review aimed to evaluate and synthesise evidence from Randomised Controlled Trials (RCTs) assessing the effects of structured exercise interventions on physical fitness parameters, cardiovascular outcomes and anthropometric measures in obese individuals.

Materials and Methods: The PubMed, Scopus and Google Scholar databases were utilised to search for the literature. Titles, abstracts and subsequently the full texts were screened to identify papers that met the inclusion criteria. The methodological quality of the studies was assessed on the 11-point PEDro scale. Risk of Bias assessment was carried out using the Risk of Bias 2 (RoB 2) tool in Cochrane review tools. Studies were included.

Results: Ten studies met the inclusion criteria. This indicated that exercise interventions, especially combined aerobic and resistance training, significantly improved VO2 max and muscular strength in physical fitness, cardiovascular benefits included reductions in systolic and diastolic blood pressure and resting heart rate. Anthropometric benefi ts comprised reductions in body weight, Body Mass Index (BMI) and waist circumference. Combined training was always made superior to aerobic or resistance training alone for all outcomes assessed.

Conclusion: Exercise interventions present, especially those that include both aerobic and resistance training are effective in enhancing physical fi tness, cardiovascular indices, and body composition among obese young adults. The evidence provides support for the inclusion of structured exercise as a key component of obesity treatment during early adulthood, but furthermore, studies are needed to confirm long-term effects and outcomes.

Keywords: Anthropometric outcomes, Exercise intervention, Physical functioning

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