

The "Fat but Fit" Paradigm from a Children's Health-Related Quality of Life Perspective

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Abstract

Background: The fat but fit paradigm originally argues that the detrimental influence of obesity on cardiovascular risk and mortality could be counterbalanced by normal to high cardiorespiratory fitness (CRF) levels. The aim of the study was to determine whether there is a relationship between categories of the fat but fit conceptual model and health-related quality of life (HRQoL) in children. **Materials and Methods:** Cross-sectional cluster analyses of the MOVI-daFit! baseline data were conducted in 507 children aged 9 to 11 years in Cuenca, Spain. BMI, body fat percentage, VO2 max estimate, and HRQoL (measured by the KIDSCREEN questionnaire) were assessed. **Results:** The cluster analysis of BMI/body fat percentage and VO2 max estimate z-scores resulted in a four-cluster solution that fit the four categories included in the fat but fit paradigm: fat unfit (FU), unfat unfit (UU), fat but fit (FF), and unfat fit (UF). Analysis of variance (ANOVA) models showed the expected mean trends by cluster category: an increasing trend (FU<UU<FF[removed]FF>UU>UF) in terms of adiposity ($p < 0.05$). These models also indicated, in the whole sample, that schoolchildren in the FF and UF clusters scored higher on physical well-being, psychological well-being, and total HRQoL scores than their peers in the FU and UU clusters ($p < 0.05$). The results were similar regardless of gender and whether BMI or body fat percentage was used for clustering. **Conclusions:** This study reinforces the fat but fit paradigm with respect to a previously unexplored outcome, HRQoL, by indicating that CRF may be mediating in the relationship between obesity and HRQoL. Clinical Trial Registration number: NCT03236337. © 2021 Mary Ann Liebert Inc.

Author keywords

body composition; fitness; health-related quality of life; schoolchildren