The mediating and moderating effects of physical fitness of the relationship between adherence to the Mediterranean diet and health-related quality of life in university students

Martín-Espinosa, N.M.
Garrido-Miguel, M.
Martínez-Vizcaíno, V.
González-García, A.
Redondo-Tébar, A.
Cobo-Cuenca, A.I.

Abstract
The aim of this study was to estimate the relationship between the adherence to the Mediterranean diet (MD) and health-related quality of life (HRQoL) in university students and to assess whether this relationship is mediated or moderated by cardiorespiratory fitness (CRF) and handgrip strength. A cross-sectional study was performed involving 310 first-year Spanish university students. Adherence to the MD was evaluated with the 14-item Mediterranean Diet Adherence Screener (MEDAS), and the HRQoL was evaluated with the Short Form-12 (SF-12) questionnaire. CRF was assessed by the 20 m shuttle run test, and the handgrip strength was determined by dynamometry. ANCOVA models showed that participants with higher CRF and handgrip strength levels had significantly higher scores in the physical component summary (PCS) and mental component summary (MCS) of the SF-12 and in the MEDAS questionnaire than those with medium and low scores (p < 0.050). Additionally, the ANCOVA models showed that students with good adherence to the MD showed higher scores in the MCS of HRQoL than those with low adherence (p = 0.044, ES = 0.013), but these results did not appear for the PCS of HRQoL (p = 0.728, ES = 0.001). In the mediation analysis, it was found that CRF and handgrip strength acted as full mediators of the relationship between adherence to the MD and the MCS of HRQoL. In the moderation analysis, it was evidenced that CRF and handgrip strength did not act as moderators in the relationship between adherence to the MD and the MCS of HRQoL. In conclusion, adherence to the MD does not seem to have a direct effect on the MCS of HRQoL because this association seems to be fully mediated by CRF and handgrip strength.

Author keywords
Fitness
Health-related quality of life
Mediterranean diet
Muscle strength
Young adults