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Title: Waist circumference and lung function parameters: The PLATINO study

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Body: Background: Obesity is a known risk factor for chronic diseases. Recently, studies have shown that abdominal fat, measured by waist circumference, rather than BMI, is a more important predictor for the development of non-communicable chronic diseases. Objective: To evaluate the association between waist circumference (WC) and lung function parameters among adults. Methods: A cross-sectional study was performed in five Latin America countries (Brazil, Chile, Mexico, Uruguay and Venezuela), named the PLATINO study. The data were collected between 2002 and 2004 among adults aged ≥40 years old. FVC and FEV1 were measured using spirometry pre and post bronchodilator. WC was measured by trained interviewers. Data analyses were performed using multiple linear regression models and were stratified by sex. Results: The correlation coefficients (r) between WC and FVC and FEV1 were negative, although for WC and FEV1/FVC the coefficients were positive. After adjusting for age, height, weight, BMI and smoking, the increase of 1 cm in WC decreased FEV1 by 0.018 liters [95%CI -0.023; -0.013] in males, and 0.009 liters [95%CI -0.011; -0.006] in females. For FVC, the results showed the same direction, but were more expressive (males β = -0.024 [95%CI -0.057; -0.018] and females β = -0.014 [95%CI -0.017; -0.011]). When we evaluated the predicted values for FEV1 and FVC, an inverse relationship with WC was also found. For FEV1/FVC, only females showed a direct relationship with WC (β = 0.066 [95%CI 0.018; 0.114]). Conclusion: WC has an inverse relationship with lung function parameters in both males and females adults in Latin America, constituting an important public health issue requiring interventions.