

Randomized Clinical Trials of obesity treatments in Mexican population. Systematic Review and Meta-Analysis

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Background: Mexicans and Mexican Americans share similar culture, genetic background, and predisposition for obesity and diabetes. Randomized clinical trials (RCT) assessing obesity treatments (ObT) are reliable to assess efficacy. To date, there is no systematic review to investigate ObT tested by RCT in Mexican adults.

Methods: We conducted systematic searches in Pubmed, Scopus, and Web of Science to retrieve ObT RCT through 1990 to 2019. The ObT included alternative medicine, pharmacological, nutritional, behavioral, and surgical interventions. The analyzed RCT were at least three months of duration, and reported: BMI, weight, waist circumference, triglycerides, glucose and blood pressure.

Results: We found 634 entries; after removal of duplicates and exclusions based on eligibility criteria, we analyzed 43 and 2 multinational-collaborative studies. Most of the national studies had small sample sizes, and did not have replications from other studies. The nutrition/behavioral interventions were difficult to blind, and most studies had medium to high risk of bias. Random effects meta-analysis of nutritional/behavioral interventions and medications showed effects on BMI, waist circumference, and blood pressure. Simple measures like plain water instead of sweet beverages decreased triglycerides and systolic blood pressure. Participants with obesity and hypertension had beneficial effects with antioxidants, and the treatment with insulin increased weight in those with T2D.

Conclusions: The RCT's in Mexico reported effects on metabolic components despite small sample sizes and lack of replication. In the future we should analyze ObT in population living on the U.S.-Mexico border; therefore, bi-national collaboration is desirable to disentangle cultural effects on ObT responses.