Cardiovascular Risk Factors in Rural Mexico: Results from the Proyecto Puentes de Salud

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Background
Hispanics are the largest and fastest growing minority in the United States (U.S.), with Mexicans being the largest Hispanic subgroup. However, little is known about their antecedent lifestyles and health risks and how these might contribute to their health status when they emigrate to the U.S. and other nations. Cardiovascular (CV) risk factors and outcomes among Mexican Americans living within the U.S. have been described; however there is a lack of data on the prevalence of these factors in rural Mexicans. We investigated the prevalence of cardiovascular risk factors and health-related behaviors among rural residents of Guanajuato, Mexico.

Methods
Participants were recruited from 15 rural communities in Guanajuato, Mexico during the summer months of 2006 and 2007. Participants were screened for hypercholesterolemia (total cholesterol >200 mg/dL), impaired glucose tolerance (fasting glycemia >100mg/dL), elevated blood pressure (BP >140/90), abdominal obesity (waist-to-hip ratio >0.9 for men and >0.85 for women), and for low HDL cholesterol (HDL-C<40 mg/dL men, <50mg/dL women). Total cholesterol, HDL cholesterol, and fasting glucose were measured using a point-of-care device. Participants were also counseled about risk factors for cardiovascular diseases and diabetes, and interviewed using a standardized questionnaire that included demographic information, past medical and family history, dietary and lifestyle behaviors, and social and psychological health.

Results
A total of 699 participants were included in the study. Prevalence of elevated blood pressure was 35.6%, and 22.5% of the sample had impaired glucose tolerance. Frequency of hypercholesterolemia was 18.3% and frequency of low HDL was 82.5%. Abdominal obesity was present in 78.6% of subjects. Of note, 39.6% met modified ATP III criteria for metabolic syndrome. The table depicts demographics and CV risk factors.

Variable	Mean (±SD)
Mean age (years)	46.5±16.0
Female Gender	80.7%
Mean Systolic BP (mmHg)	132.9±21.0
Mean Diastolic BP (mmHg)	80.8±11.1
Fasting Glycemia (mg/dL)	97.3±37.2
Total Cholesterol (mg/dL)	172±33.8
HDL Cholesterol (mg/dL)	36.7±10.4
Waist-Hip Ratio	0.91±0.07

Conclusions
Our study shows a high prevalence of cardiovascular risk factors in rural Mexicans. The prevalence of metabolic syndrome and of low HDL cholesterol levels was particularly

noteworthy in this relatively young cohort. Future research may focus on the possible role of lack of health-literacy in perpetuating poor diet, limited exercise, and poor daily health choices. Improving the health of Mexicans in their place of origin may also have a ripple effect on the health of Latin American immigrants to other nations.