Objective This study aims to describe the relationship between body mass index (BMI) and blood pressure in three distinct Pakistani populations.

Methods Three population groups were recruited: Rural (born and remained in Ayacucho), Migrant (born in Ayacucho and migrated to Lima), and Urban (born in Lima). Systolic blood pressure (SBP) and diastolic blood pressure were measured using oscillometric devices (Omron M5-i, Japan) and standardised techniques. BMI was calculated from standardised measurements. ANOVA was used to test differences between groups. Multi-variable linear regression was used to describe the relationship between BMI and blood pressure, adjusting for potential confounders.

Results SBP was similar in the rural (120.9±18.7) and migrant groups (119.9±16.4), but higher in the urban group (128.2±22.9). BMI was significantly lower in the rural group (23.2±2.7), but similar in the migrant (27.0±4.3) and urban groups (28.3±5.4). There was a positive relationship between BMI and SBP (slope 0.81; 95% CI 0.59 to 1.03) after adjustment for age, sex, height and haemoglobin. A positive relationship was observed in urban residents (0.61; 0.04–1.18), but the gradient of the relationship was steeper in the migrant group (0.75, 0.48–1.02). Similar results were found for diastolic blood pressure.

Conclusions The relationship between BMI and blood pressure differed between our three study populations, with blood pressure rising at lower values of BMI in migrants. Migrant population in transitional countries may be at greater risk of developing hypertension, and the effect of BMI as a predictor is not uniform in migrant and urban-born residents.

P2-193 CONFIRMATORY FACTOR ANALYSIS OF METABOLIC SYNDROME COMPONENTS IN IRANIAN ADOLESCENTS: TEHRAN LIPID AND GLUCOSE STUDY

M Sanjari, 2A Mirzazadeh,* 1S Z Asi, 1N Saadat, 1M Tohidi, 2F Aziz. 1Research Institute for Endocrine Sciences, Shahid Beheshti University of Medical Sciences and Metabolic Disease Research Center, Tehran, Iran; 2Physiology Research Center, Kerman University of Medical Sciences, Kerman, Iran

Introduction There is no applicable model for identifying the metabolic syndrome in adolescent populations. The aim of this study was to identify the most components of risk variables associated with metabolic syndrome in Iranian adolescents.

Methods Anthropometry, blood pressure and biochemical measurements were assessed in a population-based study of 1307 Iranian adolescents (563 boys and 744 girls) aged 8–11 years in two phases, 1999–2001 and 2003–2007. Exploratory and confirmatory factor analysis was conducted using SPSS version 15.

Results A two-factor structure was identified accounting for 55.8% and 53.8% of variance for boys and girls, respectively. The factor loadings for boys (and girls) in study round one two were 0.87 (0.84), 0.88 (0.82), 0.67 (0.65), 0.75 (0.8) and −0.80 (0.81) for systolic blood pressure (SBP), diastolic BP, waist circumference (WC), triglycerides (TG) and high-density lipoprotein (HDL) respectively. In phase two, the factor loadings for boys (and girls) were 0.74 (0.86), 0.76 (0.83), 0.72 (0.43), 0.75 (0.74), −0.72 (−0.77) for SBP, DBP, WC, TG and HDL respectively. Fasting blood sugar had a loading factor of 0.47 only in boys in study round two. The two-factor model fit the data significantly in both study rounds by sex (Comparative fit index: 0.77–0.97).

Conclusion The two-factor model could be used for determining metabolic syndrome in adolescents in Iran; these two factors are blood pressure, and lipid profile obesity.