Global Health Matters

This article on determinants of pre-hypertension and hypertension in rural southwest China is an interesting study with more than 11,000 subjects. The finding that pre-hypertension is more prevalent than hypertension provides evidence of the need for early intervention in the population and intervention strategies that are appropriate for the diverse ethnic groups that exist within the population.

As the authors note, the prevalence of hypertension has risen in the last decade in China. This increase follows a worldwide trend regarding the growing burden of noncommunicable diseases as a serious public health concern; moreover, half of all noncommunicable disease deaths worldwide are cardiovascular in nature. Le and colleagues were able to recruit a very large population for this study and maintain a high level of participation—more than 94%. This study does not show the strong relationship to individual income that is reported in many studies; however, it does demonstrate the importance of ethnicity as it relates to pre-hypertension and hypertension. The authors suggest that genetic factors, various diet-related factors, and lifestyles may be more important determinants for blood pressure levels than individual income.

What is significant in this study is that the size provides an opportunity to look at differences within what might appear to be a fairly homogenous population. In fact, the population is quite diverse, and the diversity provides evidence of the need for more tailored interventions for reducing pre-hypertension and hypertension.

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MULTILEVEL ANALYSIS OF THE DETERMINANTS OF PRE-HYPERTENSION AND HYPERTENSION IN RURAL SOUTHWEST CHINA

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The global burden of noncommunicable diseases is emerging as a major public health challenge in the world.¹ Cardiovascular diseases (CVDs) account for half of noncommunicable disease deaths worldwide.² Hypertension is a well-known risk factor for the development of CVD, heart attack, and stroke.³ The World Health Organization (WHO) estimates that one-half of CVDs are caused by elevated blood pressure (BP).⁴ Hypertension prevalence has been increasing, and an estimated 972 million people in the world suffer from this problem.⁵

Pre-hypertension is a new category of BP classification recommended by the Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC 7) in 2003,⁶ in which people with a systolic BP of 120–139 millimeters of mercury (mmHg) and/or a diastolic BP of 80–89 mmHg are categorized as having pre-

hypertension. The individuals with pre-hypertension are known to be at increased risk of developing hypertension.^{7,8} In addition, pre-hypertension is associated with increased risk of CVD, independent of other CVD risk factors.^{9,10}

In China, the prevalence of hypertension has risen in the last decade. The International Collaborative Study of Cardiovascular Diseases in Asia indicates that the overall prevalence of hypertension in the Chinese adult population aged 35–74 years in 2001 was 27.2%,¹¹ or 2.4 times higher than it was in 1991 (11%).¹² However, there are few data on the epidemiology of pre-hypertension in China. Only a few studies estimate the prevalence of pre-hypertension in rural China, which ranges from 38.4% to 47.0%, and pre-hypertension has been found to be more common than hypertension.^{13–15}

As in most traditional epidemiologic studies, investigations on the risk factors of pre-hypertension and hypertension have focused mainly on individual-level socioeconomic status (SES) variables such as income, education, and unemployment. Abundant evidence indicates that the individual SES is strongly associated with hypertension and other CVD risk factors.^{16–18} Hypertension has shown an inverse relationship with income, unemployment rate, and education level.^{19–22} Recently, researchers have become increasingly interested in examining the contextual SES effects on CVD risk factors.^{23,24} Several studies suggested that neighborhood SES characteristics are inversely associated with