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# High prevalence of pre-hypertension in mothers of young children in peri-urban Nepal: A study from the Jhaukhel-Duwakot Health Demographic Surveillance Site (JD-HDSS) 

Abhinav Vaidya<br>Kathmandu Medical College, Nepal

Prehypertension is clinically defined as a level of blood pressure between normal and hypertension, i.e. elevated systolic blood pressure in the range of $120-139$ or diastolic blood pressure between $80-89 \mathrm{~mm} \mathrm{Hg}$. Prehypertension remains neglected as a public health problem. As it has not been explored in mothers with small children in Nepal, we aimed to study prehypertension and its related factors including obesity-related parameters among mothers with children aged 1-7 years in Jhaukhel-Duwakot Health Demographic Surveillance Site (JD-HDSS) of Bhaktapur district. We prepared a sampling frame of all eligible mothers, and interviewed 962 of them. The trained enumerators also measured blood pressure, weight, height, waist and hip circumferences. We received ethical approval from the Nepal Health Research Council to conduct the study, and obtained informed verbal consent from the participating mothers. Mean age of the mothers was $29 \pm 4.6$ years (range: 19-48). Twenty three percent of the participants had education level of less than grade 1. Most mothers ( $73 \%$ ) were housewives, while the rest were employed ( $17 \%$ ) or doing agriculture or labor work $(10 \%)$. Sixty percent of participants had normal blood pressure while one-third ( $31.8 \%$ ) of them had prehypertension. Ten mothers reported having been diagnosed with hypertension ( $10 / 916=1.1 \%$ ). Of these, six were on medication $(6 / 10=60 \%)$. Of the six, only one had her blood pressure under control ( $1 / 6=16.67 \%$ ). Among the remaining 906 mothers, 69 had hypertension during the survey ( $69 / 916=7.5 \%$ ). Hence, the prevalence of hypertension was $8.6 \%(1.1 \%+7.5 \%)$, and out of 79 hypertensive mothers, only 10 knew that they had hypertension (awareness rate: $12.65 \%$ ). Prehypertension was not associated with any of the Sociodemographic variables except for education. We found positive correlations between blood pressure and obesity parameters. Overweight and obese participants were 2.24 ( $95 \%$ confidence interval: 1.06-4.73) and 4.65 ( $95 \%$ confidence interval: 1.92-11.23) times, respectively, more likely to have prehypertension than underweight mothers. Our study demonstrated a high prevalence of prehypertension, coupled with high obesity parameters, among these peri-urban mothers. Preventive efforts at community level are urgently needed for these young mothers of Nepal.

