Home Blood Pressure Monitoring in South Asia: Prevalence, Predictors, and Practice Patterns

Background:
Hypertension (HTN) is the leading preventable cause of premature death worldwide, affecting over 1.4 billion people, with the majority in low- and middle-income countries. Despite guideline recommendations, the adoption of home blood pressure monitoring (HBPM) remains inconsistent, particularly in South Asia, where HTN prevalence continues to rise. While HBPM improves BP control, barriers such as cost, inaccurate devices, inadequate patient training, and selective reporting persist. Data on HBPM use in South Asia remain limited.

Objective:
To identify demographic, socioeconomic, and clinical predictors of HBPM use and assess knowledge and practices related to HBPM across four South Asian countries.

Methods:
A cross-sectional, population-based survey was conducted in Pakistan, India, Sri Lanka, and Bangladesh using structured questionnaires administered online and in-person. Adults provided informed consent, and institutional ethics approval was obtained. Data were analyzed using JMP 13, with significance set at $p<0.05$.

Results:
A total of 2729 participants (mean age 40.9±18 years, 40.9% female) were surveyed: Pakistan (n=733), India (n=1061), Sri Lanka (n=578), and Bangladesh (n=342). Overall, 29.8% reported HTN, with comorbidities including diabetes (22.5%), hypercholesterolemia (19.1%), smoking (27%), cardiovascular disease (25%), and chronic kidney disease (15%). HBPM was reported by 50.8% (n=1369), with 48% (n=1306) using it regularly. However, only 33.7% (n=912) shared readings with their healthcare providers. While there was no significant difference in BP device ownership, patients with HTN were more likely to use HBPM regularly (51.6% vs. 26.6%).Knowledge gaps were notable: 49.7% identified correct arm position, 26% baseline rest, 36.8% activities to avoid, 47% correct body position, 28.9% number of readings, and 36% required documentation, with significantly lower scores in patients with a diagnosis of HTN ($p<0.001$). Country-wise differences were significant, with highest knowledge in Bangladesh and Pakistan, followed by Sri Lanka and India.

Conclusion:
HBPM ownership and use are moderately common in South Asia, yet knowledge of correct practices remains suboptimal. Interventions to improve patient education, access to validated devices, and healthcare integration of HBPM are urgently needed to strengthen HTN control in the region.