**THE EFFECT OF SELF-MONITORING OF BLOOD PRESSURE ON MEDICATION ADHERENCE AND LIFESTYLE FACTORS: SYSTEMATIC REVIEW, META-ANALYSIS AND QUALITATIVE INTERVIEWS**

B.R. Fletcher, **J. Hartmann-Boyce**, L. Hinton, R.J. McManus

University of Oxford, Oxford, UK

*Background*: Self-monitoring of blood pressure (SMBP) can contribute to reduced blood pressure in people with hypertension. Potential mediators include increased medication, improved adherence, and changes in lifestyle factors. The objective of this review and associated interviews was to determine the effect of SMBP on medication adherence, medication persistence, and lifestyle factors in people with hypertension.

*Methods*: Electronic bibliographic databases were searched through to identify randomized controlled trials that compared SMBP to control/usual care in ambulatory hypertensive patients and reported medication or nonpharmacologic treatment adherence measures. Following this, we interviewed hypertensive patients who were engaged in self-monitoring to further investigate our findings.

*Results*: Twenty-eight trials with 7,021 participants fulfilled the inclusion criteria. Medication adherence was assessed in 25 trials (89%), dietary outcomes in 8 (29%), physical activity in 6 (21%), and medication persistence in 1 (4%). Blood pressure was assessed in 26 studies (93%). Pooled results of 13 studies demonstrated a small but significant overall effect on medication adherence in favor of SMBP interventions (standardized mean difference 0.21, 95% CI 0.08, 0.34), with moderate heterogeneity (I2 = 43%). Where SMBP interventions had a significant effect on lifestyle factor change, the effect was unlikely to be clinically significant. Pooled results of 11 studies demonstrate a significant overall effect on diastolic blood pressure in favor of SMBP (weighted mean difference -2.02, 95% CI -2.93, -1.11), with low heterogeneity (I2 = 0%). A test for subgroup differences showed no difference when studies were grouped according to whether medication adherence was significantly improved or not. Interviews with participants suggested unguided self-monitoring increased knowledge but did not alter behaviour.

*Conclusions*: SMBP may contribute to improvements in medication adherence in hypertensives. However, evidence for the effect of SMBP on lifestyle change and medication persistence is scarce, of poor quality, and suggests little clinically relevant benefit.