UNTANGLING THE ASSOCIATION BETWEEN ANTIHYPERTENSIVE MEDICATION ADHERENCE AND BLOOD PRESSURE CONTROL.

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While much is known about the origin, detection, and treatment of hypertension, barriers to blood pressure control such as low medication adherence require investigation in order to increase sustained control of this chronic disease and improve clinical outcomes. The Cohort Study of Medication Adherence in Older Adults (CoSMO) is a prospective study of the barriers to antihypertensive medication adherence assessed both via self-report and an objective pharmacy-fill adherence measure in older adults with essential hypertension. The electronic medical record (EMR) is used to determine blood pressure control from clinical readings. This analysis seeks to explore the strengths and weaknesses of using the EMR, and examines the relationship between adherence and healthcare utilization habits of older adults with hypertension.

Blood pressure readings are available for 92.8% (N=2,037) of the CoSMO population with both substantial terminal digit bias and threshold bias; over 15% have systolic blood pressure exactly 140 mmHg or diastolic blood pressure exactly 90 mmHg, and nearly 50% of all readings end in zero. The associations between both pharmacy fill and self-report adherence are stronger for those with multiple visits and may provide a better representation of one’s true blood pressure, as averaging may correct for recording biases and any single aberrant reading. Prevalence of low adherence and uncontrolled blood pressure is high among those who have only a single primary care visit, although data quality of this one recording may be inflating the percent uncontrolled and dampening the association with adherence. Those who visit their primary care physicians often are also more likely to have uncontrolled blood pressure in addition to other co-morbidities, and while they are filling more classes of antihypertensive medication prescriptions, their low medication adherence may be an important barrier to address.

A significant association between medication adherence and blood pressure control was identified using clinic blood pressure readings for CoSMO participants. The relationship between number of primary care visits, medication adherence, and blood pressure can inform both the physician and the public health researcher in understanding barriers to treating hypertension.

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