### Submission Id: 5120

## Title

Understanding the Effect of an mHealth Approach for HTN Management in Uncontrolled Hypertensive Blacks

# Priority 1 (Research Category)

Hypertension

## Presenters

Lorraine Buis, PhD, Reema Kadri, LynnMarie Mango, Dongru Chen, MS, Rachelle Muladore, BS, Katee Dawood, Zora Djuric, Caroline Richardson, MD, Phillip Levy, Candace McNaughton

## Abstract

Context: Black Americans face significant health disparities related to hypertension (HTN). Strategies are needed to reach this often-underserved population, and while mHealth may offer a platform for intervention, solid evidence remains elusive for the viability of this approach. Objective: To test the effect of an mHealth app (MI-BP) on systolic blood pressure (SBP) at 12-months among Blacks with uncontrolled HTN. Study Design and Analysis: This was a 12-month RCT. Participants were randomized to either enhanced usual care (prescriptions for antihypertensive medications, if needed, and a Bluetooth-enabled BP cuff) or enhanced usual care + MI-BP intervention. Differences between groups were compared by a Linear Mixed Regression model. Due to the COVID-19 pandemic, recruitment was stopped early. Setting or Dataset: Participants were recruited from urban emergency departments and community-based settings in Detroit, MI. Population Studied: Black adults aged 25-70 with uncontrolled HTN. Intervention/Instrument: The MI-BP intervention group were provided with a Fitbit Zip pedometer and access to the MI-BP app, which targeted BP and physical activity monitoring; sodium intake logging; goal setting, medication reminders, and educational and motivational messaging. Outcome Measures: The primary outcome measure for this trial was SBP at 12-months. Results: We randomized 162 participants and at 52 weeks, 67 remained (41.4%). Our predominantly female (59.9%) sample had a mean age of 48.3 years and less than a college degree (55.6%), with annual household incomes of < \$25,000 (45.1%). Significant reductions in SBP were seen in both the control (baseline mean SBP = 154.1 mmHg; 52-week mean SBP = 128.6 mmHg; p < 0.001) and intervention group (baseline mean SBP = 154.1 mmHg; 52-week mean SBP = 131.3 mmHg; p < 0.001), with no significant differences found between groups at either timepoint. Conclusion: While we were unable to show differences between groups due to the MI-BP app alone, the evidence is clear that Blacks in urban, underserved areas can experience clinically significant improvement in SBP when engaged in meaningful clinical care, as provided during our enhanced usual care to both groups. Outreach is critical to find people where they are seeking healthcare, such as emergency departments and community events.