

Association Between Hispanic Ethnicity and Engagement in a Remote Postpartum Blood Pressure Monitoring Programs: Secondary Analysis of a Pilot Randomized Trial

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ABSTRACT

OBJECTIVE: Remote self-measured blood pressure (SMBP) programs improve racial health equity among postpartum people with hypertensive disorders of pregnancy (HDP) who receive recommended blood pressure ascertainment after hospital discharge.¹⁻³ However, as prior studies have been conducted within racially diverse but ethnically homogeneous populations,¹⁻³ the effect of SMBP programs on ethnicity-based inequities is less understood.⁴ We examined whether SMBP rates differed among Hispanic versus non-Hispanic participants in remote SMBP programs.

STUDY DESIGN: This is a planned secondary analysis of a RCT conducted among postpartum patients with HDP who were enrolled into our remote SMBP program, in which they obtain SMBP and then manually enter the SMBP value into a patient portal for individual provider response. In the parent trial, consenting patients were randomized to continued manual blood pressure entry of SMBP or use of a Bluetooth-enabled blood pressure cuff synched to a smartphone application utilizing artificial intelligence to respond to each obtained blood pressure or symptom for six weeks and to flag abnormalities for providers. Both SMBP programs were available in Spanish and English. For this study, women who self-reported their ethnicity were stratified into two ethnic groups – Hispanic and non-Hispanic – regardless of randomization group. Those who did not self-report ethnicity but completed all study procedures in Spanish were also categorized as Hispanic. Outcomes were the same in the parent study and this secondary analysis. The primary outcome was ≥ 1 SMBP assessment within 10 days postpartum. Secondary outcomes included number of blood pressure assessments and healthcare utilization outcomes (remote antihypertensive medication initiation or dose-increase and presentation to the Emergency Department or readmission for hypertension within 30 days of discharge). Participants rated their experience with SMBP via a scale from 0 (worst possible) to 10 (best possible)

and the Decision Regret Scale, which assessed their regret in SMBP program participation (0=no regret; 100=high regret)).⁵ Outcomes were compared between groups. Risk differences (RD) were calculated for categorical and regression coefficients for continuous outcomes. The parent RCT was IRB-approved and published on clinicaltrials.gov (NCT05595629) before enrollment.

Table 1. Outcomes among Hispanic versus non-Hispanic participants in a randomized controlled trial comparing two self-measured blood pressure (SMBP) programs among postpartum patients with hypertensive disorders of pregnancy

	Hispanic (n=23)	Non-Hispanic (n=62)	Risk difference or Beta (95% Confidence Interval (CI))*
Primary Outcome			
Assessment of SMBP within 10 days postpartum	15 (65)	49 (79)	-0.1 (-0.4-0.1)
Secondary Outcomes: SMBP			
Number of remote BP assessments	14 (7-45)	23 (12-37)	1.1 (1.0-1.2)
Secondary Outcomes: Health Care Utilization			
Remote BP medication initiation	0 (0)	6 (10)	-0.1 (-0.2-0)
Remote BP medication titration	3 (13)	16 (26)	-0.1 (-0.3-0)
Presentation to ED within 30 days for hypertension	3 (13)	11 (18)	-0.1 (-0.2-0.1)
Readmission within 30 days for hypertension	2 (9)	7 (11)	0 (-0.2-0.1)
Secondary Outcomes: Patient experience/mood			
Decisional Regret Score at end of program	2.5 (0-10)	0 (0-25)	-6.79 (-21.12-7.55)
"Using any number from 0 to 10 where 0 is the worst possible experience and 10 is the best possible experience, please rate your experience in the postpartum hypertension program"	10 (9-10)	10 (9-10)	0.36 (-0.70-1.43)

Data are n (%) or median (interquartile range)

*Risk difference was calculated for categorical outcomes and regression coefficient was calculated for continuous outcomes.

RESULTS: Among 119 women in the parent study, 83 (70%) self-reported ethnicity and the proportion of Hispanic people was similar in both treatment groups. This study compared 23 Hispanic (19% monolingual in Spanish) to 62 non-Hispanic women. Rates of SMBP assessment within 10 days postpartum was similar (Hispanic 64% vs non-Hispanic 79%; RD -0.1 (95% Confidence Interval (CI) -0.4, 0.1). There were no differences in mean number of remote SMBP assessments or rates of remote antihypertensive medication initiation or dose titration. The rates of hypertension-related presentations to the Emergency Department or hospital readmission were also similar between groups. Lastly, regardless of ethnicity, participants had low scores on the Decision Regret Scale and rated their experience with their remote SMBP program highly favorably. (See **Table 1.**)

CONCLUSION: Hispanic and non-Hispanic postpartum patients with HDP had similar outcomes and favorable patient perceptions. The small sample size in this study may have produced inadequate power to detect a difference between study groups, thereby leading to Type II error. Thus, more research on Hispanic participants in remote SMBP programs is needed. However, the effect of remote SMBP programs on perinatal equity may not be limited to race-based disparities.

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Disclosures

Conflicts of Interest: Dr. Lewkowitz has served on a medical advisory board for Pharmacosmos Therapeutics, Incorporated in 2022, and on a medical advisory board for Shields Pharmaceuticals in 2021.

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Clinical Trials.gov information:

- 1) Date of registration: October, 21, 2022
- 2) Date of initial participant enrollment: November 7, 2022
- 3) Clinical trials number: NCT 05595629
- 4) Website: <https://clinicaltrials.gov/study/NCT05595629>

Social Media Statement: In a secondary analysis of an RCT comparing postpartum remote blood pressure monitoring programs, Hispanic and non-Hispanic participants had similar engagement rates and outcomes, reducing ethnicity-based inequities.

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