

ASSESSING PATIENT EXPECTATIONS AND EXPERIENCE WITH SELF-MEASURED BLOOD PRESSURE MONITORING (SMBP) IN COMMUNITY HEALTH CENTERS

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AIM

Understand patient expectations and experience with self-measured blood pressure monitoring (SMBP).

BACKGROUND

Self-measured blood pressure monitoring (SMBP), also known as home blood pressure monitoring, is the regular measurement of blood pressure by a patient outside the clinical setting. SMBP is a strategy that is more predictive than a single office reading to diagnose hypertension and yields more accurate and complete data to manage hypertension.¹ SMBP is a key opportunity for patient-generated data to support chronic disease management. While recent hypertension guidelines recommend the use of SMBP for diagnosis and management of hypertension,² providers are still hesitant to endorse SMBP fully, believing that

it could cause problems for them or their patients,³ such as yielding inaccurate readings or patients being unwilling to take multiple days of readings. However, studies show that patients do reliably report self-measured blood pressure readings,⁴ and SMBP can improve medication adherence by empowering them to take a more active role in managing their blood pressure.⁵ Understanding the opportunities, challenges, and barriers for patients to generate their own clinically relevant data is an important step in facilitating increased uptake of SMBP and improving hypertension outcomes.

PROJECT DESIGN/STRATEGY

From January 2017 to June 2018, nine health centers in Kentucky, Missouri, and New York trained patients with hypertension on how to use a home blood pressure monitor, correctly take their own blood pressure, understand their blood pressure readings, and return the blood pressure readings to their health care team. In October 2017, after health care teams had implemented their SMBP care models, patient questionnaires were introduced to evaluate their experience monitoring their blood pressure. Each patient was trained to use SMBP, given a home blood pressure monitor, and completed a pre-questionnaire. After monitoring their blood pressure for a period of time determined by their provider, the patient returned their blood pressure monitor and measurements to their health care team and completed a post-questionnaire.

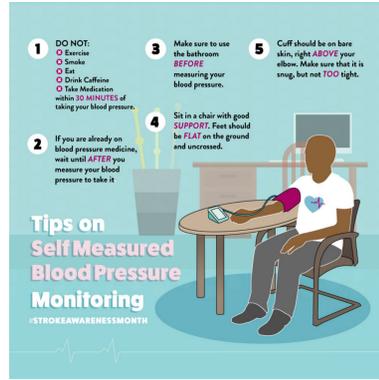


FIGURE 1: IMPORTANT PATIENT TIPS TO MEASURE BLOOD PRESSURE DURING SMBP

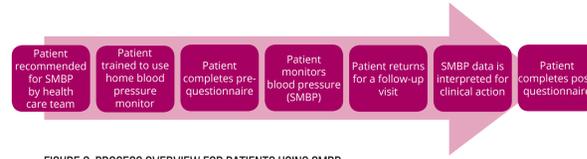


FIGURE 2: PROCESS OVERVIEW FOR PATIENTS USING SMBP

QUESTIONNAIRE DESIGN

At each health center, patients who agreed to do SMBP were asked to complete either a paper- or electronic-based pre- and post-questionnaire. After being given a health center-generated participant ID, patients were encouraged to complete the questionnaire on their own. However, staff supported their completion depending on patient literacy and ability. The questionnaire was available in seven languages, including Arabic, Dari, Haitian Creole, Spanish, Swahili, Somali, and English.

PRE-QUESTIONNAIRE

The pre-questionnaire included 16 items designed to understand patient perceptions of who had responsibility for and power to manage their blood pressure; confidence and comfortability in using a home blood pressure monitor; and perceived self-efficacy to complete the activities and steps to prepare to take and return their home blood pressure readings to the health care team. The questionnaire also queried patient beliefs about the use of SMBP to help control their blood pressure. Optional demographic information was also collected.

POST-QUESTIONNAIRE

The post-questionnaire included 20 items designed to understand the patients' overall experience with SMBP, including if they would recommend SMBP to someone they knew. Many questions from the pre-questionnaire were repeated to determine if there were any differences in response after their participation in SMBP, including monitoring shifts in the patients' perception of their abilities to monitor their blood pressure at home.

RESULTS AND LESSONS LEARNED

- 95.42% (n=333) of patients who completed a post-questionnaire and SMBP would recommend it to others.
- Patients used their home blood pressure monitor an average of 18 days (range 1-126), following their health care teams' recommendation and training.
- 71.78% (n=343) were able to write their systolic and diastolic blood pressure goal at the time of the pre-questionnaire, a key component in the training for SMBP.
- 89.63% (n=311) of patients rated themselves "Good" or "Very Good" (mean=4.75493) at taking their blood pressure in the morning. Similarly, 88.83% (n=310) of patients rated themselves "Good" or

"Very Good" at taking their blood pressure in the evening (mean=4.507042). Patients feeling confident in taking their blood pressure at least twice per day is a key activity for SMBP. These results suggest patients felt adequately prepared for monitoring their blood pressure.

- 92.19% (n=295) of patients rated themselves "Good" or "Very Good" (mean=4.75493) with bringing their blood pressure readings back to their health care team. This allowed the health care team to use the blood pressure readings to support clinical decisions, including diagnosis or medication change.
- 84.66% of patients rated their overall SMBP experience as "Good" or "Very Good" (see Figure 4).
- These results suggest that patient success was because of the hands-on training patients received prior to their

home blood pressure monitoring experience. Additionally, the results also suggest that the use of the questionnaires provided training reinforcement and support.

PATIENT VOICES:

Recomendarian a amigos y familiares el use del monitoreo y educarse mejor acerca de nuestras enfermedades.

Being able to check [my blood pressure] at home was great because I didn't have to guess if it was high and also I was able to see the effects of trying to improve.

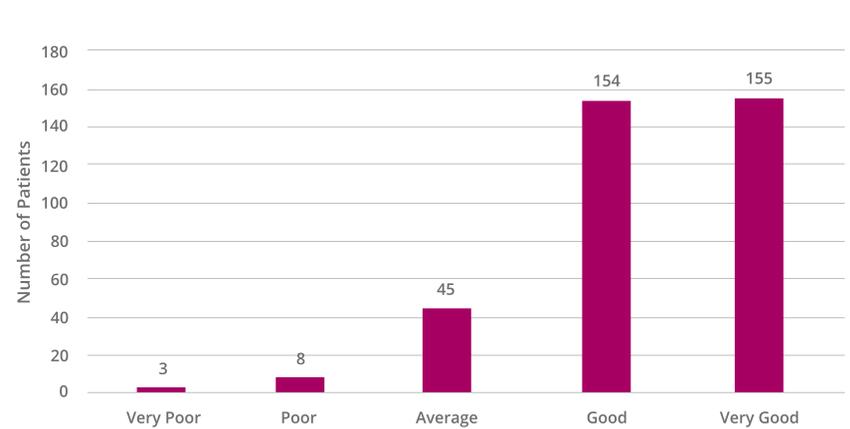
I stopped my blood pressure med[icine] in hopes to control [my blood pressure] on my own. I was staying in the red [uncontrolled] zone [during SMBP] so I started my med[icine] back - it is now controlled.

FIGURE 3: SELECT RESPONSES AND MEANS FROM PRE- AND POST- QUESTIONNAIRE

PRE-QUESTIONNAIRE			POST-QUESTIONNAIRE			p
Question	N	Mean (SD)*	Question	N	Mean (SD)*	
I am the person most responsible for managing my blood pressure.	277	4.458 (1.178)	I am the person most responsible for managing my blood pressure.	279	4.728 (0.592)	0.003
I feel confident I can use my home blood pressure monitor without trouble.	278	4.464 (1.188)	I used my home blood pressure monitor without trouble.	278	4.651 (0.791)	0.050
I feel confident I will be able to get my blood pressure readings back to my health care team without trouble.	278	4.486 (1.186)	I was able to get my blood pressure readings back to my health care team without trouble.	279	4.566 (0.986)	0.584
I believe home blood pressure monitoring will make a difference in controlling my blood pressure.	276	4.377 (1.189)	I believe home blood pressure monitoring will make a difference in controlling my blood pressure.	278	4.385 (0.887)	0.840

*The means reflect the level agreement for each question, in which a score of '5' is to 'Strongly Agree' with the statement.

FIGURE 4: OVERALL PATIENT EXPERIENCE USING SMBP



NEXT STEPS

- Explore ways to leverage this learning to increase uptake of SMBP among health systems and patients.
- Understand the characteristics and health outcomes of patients who participated in SMBP.

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