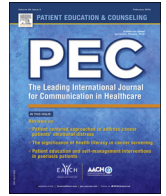




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## Can stories influence African-American patients' intentions to change hypertension management behaviors? A randomized control trial



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### ABSTRACT

**Objectives:** Information-only interventions for hypertension management have limited effectiveness, particularly among disadvantaged populations. We assessed the impact of viewing African-American patients' stories of successfully controlling hypertension on intention to change hypertension management behaviors and engagement with educational materials.

**Methods:** In a three-site randomized trial, 618 African-American Veterans with uncontrolled hypertension viewed an information-only DVD about hypertension (control) or a DVD adding videos of African-American Veterans telling stories about successful hypertension management (intervention). After viewing, patients were asked about their engagement with the DVD, and their intentions to change behavior. Mean scores were compared with two-sided *t*-tests.

**Results:** Results favored the Stories intervention, with significantly higher emotional engagement versus control (4.3 vs. 2.2  $p < 0.0001$ ). Intervention patients reported significantly greater intentions to become more physically active (4.6 vs. 4.4,  $p = 0.018$ ), use salt substitutes (3.9 vs. 3.4,  $p = 0.006$ ), talk openly with their doctor about hypertension (4.6 vs. 4.5,  $p = 0.049$ ), and remember to take hypertension medication (4.8 vs. 4.6,  $p = 0.04$ ).

**Conclusion:** Patients were more emotionally engaged and reported intentions to change behavior when watching real patient hypertension management success stories.

**Practice implications:** Stories may be more influential than information alone, and represent a scalable approach to modifying behavioral intention.

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### 1. Introduction

Uncontrolled hypertension remains an important health concern for patients throughout the US, affecting over 50 million Americans, or more than 29% of the adult population [1,2]. As blood

pressure (BP) increases, the greater the risk for adverse outcomes including the development of coronary artery disease, congestive heart failure, and stroke. While effective treatment of hypertension has been clearly shown to reduce these risks [3,4], studies have persistently shown that only about half of patients with established hypertension have their BP under control [5–7], and a disproportionate number of patients with poorly controlled BP are minorities, particularly African-Americans [1,6,8].

Hypertension self-management through diet, exercise and medication adherence can lead to good BP control and minimize adverse effects. Many educational behavioral interventions have been developed to address hypertension control and some have focused on minority populations [9]. Most often these

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interventions involve didactic teaching from providers, or cost intensive frequent contacts between patients and medical professionals, such as nurses or health coaches. Few of these interventions have demonstrated substantial success in controlling BP [10], and these interventions may be even less effective in minority populations [11]. One reason for the relative ineffectiveness of these interventions may be a problem with the ways in which information about how to best control one's hypertension is communicated. Establishing culturally appropriate communication is difficult, and communicating complex health information to patients with limited health literacy may be even more challenging.

One novel approach to communicating health information is to use narrative communication strategies. Narrative communication is broadly defined as “any representation of a sequence of connected events and characters that has an identifiable structure, is bounded in space and time, and contains implicit or explicit messages about the topic addressed [12,13].” Narrative appeals to the innate human affinity for stories and through stories we make meaning of our lives [12,14]. Narrative theory argues that stories change attitudes and behaviors by breaking down cognitive resistance because they capitalize on commonly used ways of interacting, increase personal relevance and may reduce counter-arguing [15–18]. This occurs through two mechanisms: transportation and identification. Audiences become more engaged in the material as they find themselves transported or absorbed into the world of the storyteller, and identify with or see themselves as similar to the storyteller [18]. Subsequently the audience becomes emotionally and cognitively engaged in the narrative content and may be more open and accepting of the information presented.

Narratives may be even more effective for particular populations. For example, storytelling is a central aspect of African-American culture [19], and other studies have shown that African-Americans respond favorably to stories about health [20,21]. Moreover, stories may be more easily understood by those with lower literacy whose poorer BP control may in part be due to difficulty with reading or understanding complex terminology typically used by clinicians [22].

In prior work, we showed that African-American patients' stories were effective in improving BP outcomes in comparison to an attention control [23]. The question arises whether patient stories have a beneficial effect on patients when compared to similar information presented didactically and how the stories impact patients' behavior. The current paper reports on one aspect of this study – how the stories, compared to similar content presented didactically, affected patients' intentions to change hypertension management behaviors and engagement with the educational content.

## 2. Methods

We conducted a three-site, two-armed randomized clinical trial. We compared: 1) a DVD with didactic information about controlling your hypertension, with 2) a DVD that also included edited videotaped stories of African-American patients telling their success stories about controlling their BP. The broader study examines the impact of the intervention on blood pressure and behaviors at six-month follow-up. We report here the immediate effect of the intervention on behavioral intentions. The study was approved by the US Department of Veterans Affairs Central IRB.

## 3. The intervention

We created two different types of DVDs. The control DVD was a simple, content-specific DVD, using PowerPoint slides,

photographs and a voice-over. We presented educational information about how to control your BP with segments on talking to your doctor, smoking and alcohol, taking medications, stress, diet and exercise, and talking with family and friends. We included content based on materials regarding good hypertension management behaviors from the National Heart, Lung, and Blood Institute, the American Heart Association; and the Centers for Disease Control and Prevention [24–26]. We downloaded free online pictures from Getty Images of African-Americans engaging in hypertension management behaviors associated with each of these content areas. The voice-over that was done by female African-American Veteran reciting a script describing the positive behavior and why it was important for managing hypertension.

Each stories intervention DVD also contained five stories from African-American Veterans who had success in controlling their hypertension. The patient stories were collected at three Veterans Affairs Medical Centers and were edited to represent behaviors and theoretical constructs previously identified as important for good hypertension control [27]. The development of the DVD is reported elsewhere [28]. Notably, we asked three African-American patients to join the study team and view the raw video to help identify which storytelling patients and which stories were most engaging, resonated with them and they believed would be most influential with other African-American patients with hypertension. Each story we included in the DVD began with the Veteran introducing him/herself and telling a story of when he/she first realized that hypertension was a problem. We then selected stories that corresponded to the content presented in the control DVD; including stories about talking to your doctor, smoking and alcohol, taking medications, stress, eating a healthy diet (including decreasing salt) and getting exercise. Many of the stories also incorporated talking with friends and family about hypertension. The main page of the intervention DVD had photos of five patients whose stories could be selected in any order by clicking on the photo and a link saying “Learn More” which led to the exact didactic content of the control DVD.

### 3.1. Participants

We recruited African-American patients with uncontrolled hypertension in primary care clinics at three US Department of Veterans Affairs (VA) Medical Centers (Southeast, Midwest and Mid-Atlantic) that had large African-American patient populations. Patients were eligible to participate if they self-identified as black or African-American, had documented hypertension and at least 1 uncontrolled BP (SBP  $\geq$  140 mm Hg for non-diabetics and SBP  $\geq$  130 for diabetics) in the past 12 months. Eligible participants were sent a letter inviting participation, followed by a research assistant (RA) phone call. Those who agreed to participate underwent a brief screening to confirm self-identified race as black or African-American, awareness of hypertension diagnosis and medication usage for hypertension.

### 3.2. Procedures

Patients provided written informed consent for the study. Patients met with the RA in person and were randomized to receive either the didactic only DVD (control) or the DVD that included patients' stories (intervention). The RA took three BP readings and an average of all three readings was recorded as the baseline BP. Patients completed a baseline questionnaire, then viewed the DVD with the RA in the clinic, watching as much of the DVD as they liked. They were then asked to complete a brief questionnaire immediately post-viewing the DVD.

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