Intensity of exposure to a patient activation intervention and patient engagement in medical visit communication

Chidinma Ibe\textsuperscript{a,\*}, Janice Bowie\textsuperscript{b}, Debra Roter\textsuperscript{b}, Kathryn A. Carson\textsuperscript{e,f}, Lee Bone\textsuperscript{b}, Dwyan Monroe\textsuperscript{e}, Lisa A. Cooper\textsuperscript{a,b,d,e,f}

\textsuperscript{a} Department of Health Policy and Management, Johns Hopkins Bloomberg School of Public Health, Baltimore, USA
\textsuperscript{b} Department of Health Behavior and Society, Johns Hopkins Bloomberg School of Public Health, Baltimore, USA
\textsuperscript{c} Institute for Public Health Innovation, Washington, D.C., USA
\textsuperscript{d} Division of General Internal Medicine, Department of Medicine, Johns Hopkins University School of Medicine, Baltimore, USA
\textsuperscript{e} Welch Center for Prevention, Epidemiology, and Clinical Research, Johns Hopkins University, Baltimore, USA
\textsuperscript{f} Department of Epidemiology, Johns Hopkins Bloomberg School of Public Health, Baltimore, USA

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\textbf{ABSTRACT}

\textbf{Objective:} We examined associations between intensity of exposure to a community health worker (CHW) delivered communication activation intervention targeting low-income patients with hypertension.

\textbf{Methods:} We analyzed question-asking behaviors of patients assigned to the intervention arms (n = 140) in a randomized controlled trial. Intensity of exposure to the intervention was operationalized as the duration of face-to-face coaching and number of protocol-specified topics discussed. Mixed effects models characterized the relationship between intensity of exposure and patients’ communication in a subsequent medical visit.

\textbf{Results:} The number of topics discussed during the coaching session was positively associated with patients’ asking psychosocial-related questions during their visit. The duration of the coaching session was positively associated with patients’ use of communication engagement strategies to facilitate their participation in the visit dialogue. Exposure to a physician trained in patient-centered communication did not influence these relationships.

\textbf{Conclusions:} A dose-response relationship was observed between exposure to a CHW-delivered communication activation intervention and patient-provider communication.

\textbf{Practice implications:} This study supports the use of CHWs in activating patients toward greater communication in the therapeutic exchange.

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\section{1. Introduction}

Hypertension is a significant contributor to cardiovascular disease mortality rates, posing a considerable public health challenge as the most common primary diagnosis in the United States [1–4]. Racial and ethnic minorities and those of lower socioeconomic status are more likely to bear a disproportionate brunt of the consequences of hypertension burden [2]. In particular, African Americans have higher rates of hypertension and worse blood pressure control than their White counterparts [2,5].

These disparities in hypertension prevalence can be attributed to the confluence of intrapersonal, interpersonal, and health care system factors whose intersection is often at odds with the adequate achievement and maintenance of blood pressure control [6]. This includes patient-physician communication, whose influence on patient satisfaction, adherence, and clinical outcomes is well-documented [7–13]. Indeed, there is strong indication that providers’ deployment of patient-centered communication during medical encounters may affect hypertension self-management by encouraging adherence to recommended blood pressure therapies, particularly among low-income, medically underserved African Americans [10,11,13–15].

However, the very racial/ethnic disparities observed among chronic disease prevalence emerge upon examination of the dynamics of the patient-physician exchange [16–22]. Physicians have been found to be less patient-centered with African American

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\textsuperscript{\*} Corresponding author at: Johns Hopkins University Bloomberg School of Public Health, Department of Health Policy and Management, 624 North Broadway, Room 631, Baltimore, MD 21205, USA.

E-mail address: cibe2@jhu.edu (C. Ibe).
patients than their White counterparts [21]. Compared to other ethnicities, African Americans are more likely to rate their physicians as being less participatory than those of other ethnicities [19,23], and, patient race has been found to exert a stronger influence on patient-physician communication than having uncontrolled blood pressure [24].

There is a need for culturally appropriate interventions that empower patients to engage more fully in therapeutic exchanges with their providers in view of intractable disparities in patient-physician communication [24]. Historically, interventions that target physicians’ behavior have received more empirical attention than those focused on improving patients’ communication with providers [25–28]. Interventions that activate greater participation during medical encounters, evidenced by patients’ question-asking behaviors, may influence dimensions of adherence and lead to improvements in health outcomes for a range of health conditions [29–33]. Patient coaching interventions have been found to produce significant increases in the number of questions that patients ask during medical consultations [34,35]. They have been administered through clinic assistants [31,32], health educators [33], and nurses [36].

Another possible vehicle for activating patients toward greater participation in medical encounters is the utilization of community health workers, which has been identified as a culturally sensitive modality to address health disparities in health and process of care outcomes [37]. Community health workers (CHWs) are lay frontline health personnel who are typically indigenous to the communities targeted for intervention [38]. It is thought that their ethnic, linguistic, socioeconomic, and experiential concordance with members of their respective communities uniquely positions them as bridges between the health care system and sociomedically complex individuals [38–42]. CHWs, also known as lay health advisors, promotoras, outreach workers, and patient navigators, serve as cultural mediators between communities and health and social service systems; provide culturally appropriate health education and information, as well as informal counseling and social support; link individuals and families to needed resources; and advocate for individual and community needs. [42]

Although CHWs have been found, from patients’ perspectives, to improve patient-physician relationships [43], low utilization of CHWs to enhance patient participation in medical visits persists. Subsequently, the underlying mechanisms that shape associations between CHW interventions and their subsequent impact on patient-physician communication remains largely unexplored. One study that deployed CHWs as patient activation interventionists was the Patient-Physician Partnership Study, a randomized controlled trial where CHWs coached patients prior to their visits with their physicians [44]. We hypothesized that exposure to differential intensity of the coaching intervention would influence patient contributions to discussions in medical visits. Since approximately half of the patients assigned to the CHW treatment group were under the care of a physician who was trained in patient-centered communication as part of the study, our secondary analyses explored the potential for physician intervention assignment to modify the relationship between patient intervention exposure and medical communication.

2. Methods

2.1. Study design and subjects

Our examination of the post-intervention effects of the coaching sessions on patients’ visit communication was accomplished through a post-hoc, post-exposure analysis of data from the Patient-Physician Partnership (Triple P) Study, which employed a two-by-two factorial design to simultaneously assess the effect of a provider and a patient intervention on patient adherence to recommended hypertension treatment [45]. The provider intervention was a computerized, self-study communication skills training program delivered via an interactive CD-ROM that incorporated individualized feedback to physicians regarding their visits with a simulated patient. The patient intervention employed CHWs to deliver a face-to-face, patient-centered education and activation intervention (coaching).

For the purposes of this analysis, we drew our study population from patients in the intervention arm of the Triple-P Study. Roughly half of those in the patient intervention arm were exposed to physicians that received the physician intervention. Thus, we also evaluated the effect of exposure to a physician trained in communication skills on the relationship between the degree of exposure to the CHW intervention and patients’ communication behaviors. All study participants (patients and physicians alike) were recruited and enrolled between September 2003 and August 2005. Details of the study’s design have been described elsewhere [45]. The study received approval from the Johns Hopkins Medicine Institutional Review Board.

We constrained this study to patients receiving the CHW intervention in order to examine the differential impact of the coaching intervention on its recipients. While we lacked a comparison group, our approach is concordant with the notion that exploring within-group variation in randomized controlled trials elucidates the underlying mechanisms that influence the effect of interventions on outcomes [46].

2.2. Setting and data collection

Data collection took place at multiple community-based primary care sites located throughout the greater East Baltimore area, a geographic region characterized by a predominantly low-income, African American patient population. Patients had to be at least 18 years of age, have received a hypertension diagnosis, and proffer written consent to be eligible to participate in the study. Those who did not consent to participate, had not received a hypertension diagnosis from his or her provider, were likely to move away from Baltimore City within a year of study entry, or were already involved in a disease management program or study that targeted hypertension, kidney disease, or diabetes, were excluded from the study. Additionally, physical or cognitive impairment that would preclude adequate completion of the baseline assessment, as determined by the study’s research assistants, and having a medical condition that could potentially limit participation (such as HIV/AIDS or dementia) also rendered individuals ineligible to participate in the study.

2.3. Intervention

Immediately preceding their audio-recorded index visits with their physicians, patients assigned to the intervention group received a face-to-face coaching session delivered by a CHW [45]. This took place in a room in the clinical site. CHWs utilized a structured protocol (Table 1) established on principles of patient engagement, activation, and empowerment in the therapeutic dialogue that comprised five overarching categories (general medical concerns; disease-specific hypertension issues such as high blood pressure concerns, knowledge, and beliefs; adherence to medication; lifestyle modification issues associated with cardiovascular disease risk, i.e., diet, physical activity, smoking, and alcohol; and psychosocial issues, namely, self-reported stress) [45]. Specifically, CHWs: 1) reviewed the patient’s blood pressure at the time of the visit and the treatment recommendations given at the patient’s last medical visit; 2) facilitated patients’ identification and articulation of concerns regarding their medical
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