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Impact of group visits on hypertension management and self-efficacy

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Today's nurse manager is a leader of healthcare system redesign. Where nurse managers once focused their efforts and expertise on acute care, they now manage complex, broad-based systems that include preventive, acute, and chronic care services with the goal to provide individual health decision and disease self-management support through accessible, cost-effective, quality, and population-based health services.

Seventy percent of deaths in the US are due to chronic disease conditions, and chronic disease management accounts for over 75% of total healthcare cost.[1] Chronic conditions, such as hypertension, cerebrovascular and cardiovascular disease, diabetes mellitus, chronic kidney disease, and chronic obstructive pulmonary disease, are leading causes of morbidity, mortality, disability, and reduced quality of life.[2]

More than 30% of Americans have hypertension and over 50% of those diagnosed don't practice optimal BP control.[3] Lack of treatment adherence, inadequate knowledge about hypertension, and ineffective relationships between patients and their healthcare providers are some of the factors associated with poorly controlled BP.[4] Care goals include decreasing systolic and diastolic BP and increasing self-efficacy, which results in improved self-management of this chronic disease.

Over the past 2 decades, group visits have become a major model of care in the management of chronic diseases such as hypertension.[1] The purpose of this quality improvement project was to explore the group visit model for hypertension care, which includes

clinical management and information exchange to improve BP control. The aim was to reduce systolic and diastolic BP and improve self-efficacy among patients with poorly controlled hypertension.

Group visits

Group visits are extended primary care office encounters that support the physical, medical, educational, social, economic, and psychological needs of the patient.[5] With group visits, the nurse and/or primary care provider extends invitations to targeted patients based on medical history, patterns of healthcare utilization, and disease management potential and facilitates an interactive process of providing healthcare in a group setting with opportunities for patients to teach each other through discussion, shared personal experiences and coping strategies, and information exchange. Additional time is included for nurse and/or primary care provider interaction, making it easier to recognize barriers, provide educational and social support, identify community resources, and arrange individual follow-up.[6] Patients are empowered with information about the disease process and encouraged to make informed health decisions, taking responsibility for their own healthcare with guidance and direction from the nurse and/or primary care provider.

Supported by the National Institutes of Health and the Robert Wood Johnson Foundation, the group visit model was created for adults with chronic illness who are high utilizers of primary care. The overarching goals of group visits are to assess patients' perception of their healthcare, improve care in specific clinical indicators, and promote treatment adherence through group interactions.[7] In addition, group visits provide an avenue for in-depth assessment of patients' literacy levels, financial constraints, stress, and coping skills.

Group visits are an effective, less costly chronic disease management strategy, with equal to or better care outcomes than traditional hypertension management.[8] And they're relatively easy to implement when compared with the usual primary care provider office visit for chronic disease care.[9] Group visits have been shown to provide greater access to healthcare providers, improve self-management of chronic illness, advance patients' health outcomes, and increase both patient and provider satisfaction.[3,4,9,10] A study conducted by Loney-Hutchinson and colleagues found that measures of "self-care practices, self-efficacy, and patient satisfaction" were significantly higher in patients with hypertension who participated in group visits when compared with usual hypertension care. The study also demonstrated that group visits resulted in a significant reduction in healthcare utilization and cost.[11] Another randomized-controlled trial conducted by Hunt and colleagues comparing group visits to standard hypertension care concluded that patients who participated in group visits had slightly more primary care visits, but significantly fewer specialty and ED visits.[12]

Table 1: 2018 ACC/AHA high BP guidelines

Class	Systolic BP	Diastolic BP
Normal	<120	<80
Elevated	120–129	<80
Stage I	130–139	80–89
Stage II	≥140	≥90
Crisis	>180	>120

Methods

The overall goal of the project was that patients in a Southeastern US outpatient primary care clinic would experience a decrease in BP and an increase in self-efficacy after participating in three group visits over a 6-week period. A matched group pre-/posttest design was used to evaluate the effectiveness of group visits on systolic and diastolic BP control and self-efficacy. Outcome measures were assessed before and after the three group visits.

The 2018 American College of Cardiology/American Heart Association (ACC/AHA) high BP guidelines were used to assess the primary outcome of BP.[13] (See *Table 1.*) Both systolic and diastolic BP were measured using a standard electronic monitor. The secondary outcome of self-efficacy was derived from a five-item hypertension self-

efficacy questionnaire modified from an existing validated self-efficacy scale (test-retest reliability = .78).[14-16] The questionnaire encompassed several domains common across chronic diseases, including symptom control and the patient's role, emotional functioning, and communication with healthcare providers. Response options ranged from 1 (not confident at all) to 5 (totally confident), with an internal consistency of .81.[14]

Participants were recruited face-to-face and through leaflets, emails, and telephone calls. Emails and telephone calls were used to remind participants about meeting times and locations. Information sessions to provide an overview of the project and answer questions about participation were held at the clinic for interested patients who visited for primary care services 2 weeks before the project's start. Adults age 18 or older with a confirmed medical diagnosis of hypertension (ICD-10 code of I10-I16 for hypertensive diseases), taking an antihypertensive medication, and able to read and write English were eligible to participate.

A total of 45 patients who met the eligibility requirements agreed to participate, with 28 attending the first group visit. Ten individuals who attended the first visit didn't complete the project; two dropped out due to illness, four didn't continue due to transportation constraints, and four weren't included in the data due to absenteeism from the second or third group visit. A total of 18 patients participated in all three sessions (nine in group 1 and nine in group 2).

Table 2: Group visit participant characteristics (n = 18)

Characteristics		n	%
Age (years)	Group (mean = 66.28, SD = 11.42, minimum = 40, maximum = 86)		
Sex			
	Male	11	61.11
	Female	7	38.88
Race/ethnicity			
	Black	10	55.56
	White (non-Hispanic)	5	27.78
	Hispanic	3	16.67
BMI			
	Preintervention (mean = 28.3, SD = 3.99, minimum = 40, maximum = 52)		
	Postintervention (mean = 27.34, SD = 3.86, minimum = 21, maximum = 35.2)		
Weight (lb)			
	Preintervention (mean = 183, SD = 28.48, minimum = 130, maximum = 230)		
	Postintervention (mean = 171.56, SD = 28.68, minimum = 130, maximum = 215)		

Intervention

Before implementation, there was a 2-week enrollment period that included the signing of the consent forms. The three structured group sessions occurred every other week on Thursday from 12 p.m. to 1 p.m. over a 6-week period in the clinic conference room. Two patient groups were planned to accommodate up to 20 patients per group.

The first group visit included a 20-minute presentation on hypertension and usual hypertension care as guided by the Eighth Joint National Committee hypertension guidelines.[17] Following the presentation, a 40-minute interactive discussion was held on treatment options, personal challenges, and past treatment failures.

The second group visit included a 20-minute presentation on stress management and/or reduction, individual coping skills, treatment regimen adherence, and hypertension risk management. Following the presentation, 40 minutes of interactive discussion focused on individual treatment successes and challenges, the impact of tobacco and alcohol on hypertension, and a question-and-answer session.

The third and final group visit included a 20-minute presentation on nutrition, cardiopulmonary

exercise options, and risks of uncontrolled hypertension. Following the presentation, a 40-minute interactive discussion focused on potential causes of treatment failure, unrealistic individual treatment goals, and how to achieve measurable and realistic goals.

Data analysis

Data collected from group 1 and group 2 were analyzed collectively. Systolic BP; diastolic BP; self-efficacy; weight; height; body mass index (BMI) reported as mean, standard deviation (SD), minimal, and maximum; and demographic data (age, sex, and race) reported as frequencies and percentages were analyzed. The Wilcoxon rank-sum test was used to compare the rank differences, pre/post systolic and diastolic BP, and self-efficacy data. Post group visit systolic BP, diastolic BP, self-efficacy scores, and demographic data were assessed within the group.

The self-efficacy questionnaire was scored by computing a mean for each of the five items. Scores could range from 1 to 10, where higher scores reflected higher levels of self-efficacy or self-confidence related to hypertension management and lower scores reflected lower levels of self-efficacy. Demographics data were analyzed using frequency and percent data. All data analysis was conducted using statistical software, with a significance level of .05.

Results

Sixty-one percent of the participants were male (n = 11) and 39% were female (n = 7), with a mean age of 66.28 (range 40 to 86 years old). Although not significant, decreases were noted in participants' BMI between the mean pre- and postintervention BMI (28.3 kg/m^2 and 27.34 kg/m^2), with 14 participants losing weight. (See *Table 2.*)

The Wilcoxon rank-sum test revealed statistically significant decreases in systolic BP (z = 3.303, *P* = .001) and significant increases in self-efficacy scores (z = -3.851,

Table 3: Difference in score rank pre- and postintervention

	n	Rank sum	Average scores	z score	*P* value
Systolic BP					
Preintervention	18	437	157.78	3.303	.001
6 weeks postintervention	18	229	141.11		
Diastolic BP					
Preintervention	18	361	79.39	0.888	.3743
6 weeks postintervention	18	305	75.56		
Self-efficacy					
Preintervention	18	211.5	4.44	-3.851	.0001
6 weeks postintervention	18	454.5	6.99		
BMI					
Preintervention BMI	18	358	28.3	0.791	.4287
Postintervention BMI	18	308	27.34		
Weight (lb)					
Preintervention weight	18	371	183	1.204	.2287
Postintervention weight	18	295	171.56		

Note: *P* < .05

Table 4: Systolic and diastolic BP and self-efficacy pre- and postintervention mean scores (n = 18)

	Main score	Maximum score	Minimum score	SD
Preintervention systolic BP	157.78	185	139	13.37
Postintervention systolic BP	141.11	153	115	11.52
Preintervention diastolic BP	79.39	102	61	10.94
Postintervention diastolic BP	75.56	90	60	11.07
Self-efficacy preintervention	4.44	7.4	3	1.35
Self-efficacy postintervention	6.99	10	2	1.77

P = .0001) after completion of the three group visits. (See *Table 3.*) Participants had lower mean systolic BP (141.11 mm Hg) and higher self-efficacy scores (6.99) compared with preintervention measurements of 157.78 mm Hg and 4.44, respectively. (See *Table 4.*) Participants also had lower diastolic BP postintervention (75.56 mm Hg) compared with preintervention measurements (79.39 mm Hg), although this decrease wasn't statistically significant (z = 0.888, *P* = .3743).

Discussion

Although a convenience sample was used to identify participants and factors such as medication changes weren't controlled, this project demonstrated a number of strengths. It was the first initiative exploring the effects of group visits on hypertension control and self-efficacy at the clinic location. Despite the small sample size, participants experienced significant improvements in systolic BP and capacity to self-manage hypertension. These improvements may be related to increased time for patient-provider interaction or consistent follow-up through provider and peer support. The group visits provided time for review of hypertension treatment guidelines; screening for complications; and education about preventive care, including nutrition, physical activities, and stress management. Additionally, participants experienced improvements in BMI, with an average weight loss of 11.44 lb (5.2 kg) among the group.

The positive findings in this pilot project are consistent with previous studies, supporting the group visit as an effective hypertension management tool that can be used not only to lower BP, but also empower patients to believe in their own ability to manage chronic hypertension.[4,5,9] Longitudinal group visit studies with larger samples and control groups are warranted.

Improving together

Findings from this project support a continued need for nurse managers to identify and implement health system redesign strategies that provide individual health decision and disease self-management support. Participants in this project demonstrate that many patients with hypertension lack adequate knowledge about their disease and have low self-efficacy. Findings further validate that hypertension education and increased patient-provider time through group visits are effective strategies to improve BP control, treatment adherence, and chronic disease self-management. NM

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