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Emergency Nursing Policy and Hypertension Awareness: an Integrative Review of the Literature

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Abstract

Purpose of Review This study aims to systematically examine the literature on nursing policy and hypertension (HTN) awareness in the emergency department (ED).

Recent Findings The electronic databases searched included Pubmed, OVID, CINAHL, and Web of Science. Studies were limited by adult, English language, and peer-reviewed articles published in the USA between the years 2015 and 2018. Our literature search allowed for quantitative and qualitative studies with a focus on nursing policy and adult patients treated in the ED who have HTN or elevated BP. Eight quantitative studies were retained for review and appraisal, and were rated to be of moderate quality evidence. Findings were summarized under three themes: BP reassessment, referral, and practice.

Summary The role of ED nurses in the screening and referral of this patient population remains largely uncharacterized. More robust trials are critically needed to improve practice and outcomes for patients with uncontrolled HTN. Clinical trials are needed to examine the efficacy of ED-based interventions on BP control, using multi-disciplinary samples of ED clinicians.

Keywords Nursing policy · Blood pressure · Integrative review · Literature review · Hypertension · Guideline · Position statement · Emergency nursing · Hypertension awareness

Introduction

Hypertension (HTN) is pervasive in the United States (U.S.) and associated with increased morbidity and mortality related to cardiovascular disease (CVD) [1]. Because this chronic modifiable condition affects one-third of the U.S. adult population and may affect > 90% of individuals during their lifetimes, adequate control of blood pressure (BP) is of considerable public health importance [1]. However, recent studies indicate that less than half (48%) of people living with HTN have their BP under control, a group disproportionately represented in U.S. emergency departments (EDs) [2].

Nearly 44% of patients who visit the ED have elevated BP, compared to 27% of those who visit their primary care provider (PCP), and the frequency of HTN-related visits is steadily increasing [3]. Though ED clinicians encounter patients with uncontrolled BP daily, many of these patients are asymptomatic and in the ED for reasons unrelated to BP [2, 4]. Several studies have established the ED to be an ideal venue to screen for HTN, in part because persistent elevated BP in the ED is highly sensitive for HTN [5–8]. Furthermore, recent studies have demonstrated that a single hypertensive event in the ED is an independent risk factor for major adverse CV events long term; however, follow-up after the ED visit can significantly decrease this risk [5].

Despite the fact that nursing care and management in the ED is critical to improved outcomes of persons with uncontrolled HTN, there have been no recent updates to the literature on HTN awareness in the ED. Since ED nurses are involved in all aspects of care, including detection, referral, and follow-up for uncontrolled HTN in the ED [9], we reviewed

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the current literature on nursing policy and HTN in the ED. The purpose of this review is to critically analyze and synthesize the existing literature, identify knowledge gaps, and discuss future research and practice implications relevant to ED nursing. The guiding question for this integrative review was "What is known about nursing policy and hypertension awareness in the ED?"

Methods

Search Strategy

An explicit search strategy, retrieval procedure, and appraisal processes were performed. Using a two-stage search strategy, the electronic databases PubMed, OVID, CINAHL, and Web of Science were searched. The first stage entailed a preliminary search of databases to identify optimal search terms, which was then followed by a search incorporating all identified terms, for the second stage. Studies were limited by adult, English Language, and peer-reviewed articles published in the U.S. between the years 2015 and 2018. Ancestry searching was also used.

Our literature search allowed for quantitative and qualitative studies with a focus on nursing policy and adult patients treated in the ED who have HTN or elevated BP. Elevated BP was defined as any initial BP reading ≥ 120/80 mmHg. Hypertension was defined as having a previous history of HTN, two BP readings ≥ 140/90 mmHg, or taking antihypertensive medication (self-report or electronic chart review). Articles were eligible for review if the following criteria were met: examined ED nurse HTN awareness or examined the relationship between ED clinical practice and HTN, and/or addressed emergency nursing policy on HTN (at any stage). Articles that did not meet our inclusion criteria were excluded. Our specific search terms are described in Table 1.

Three authors (KS, SS, and CB) reviewed the potential studies independently and as a working group to resolve all discrepancies. Each study was categorized by the findings that emerged specific to nursing policy and HTN in the ED. Some studies were categorized under more than one theme. Each study was critically appraised using a tool provided by Polit and Beck (2017) and presented in Table 2 [16]. This tool is a rigorous guide for examining the clarity of the study aim, use of appropriate design, and description of sample characteristics. Finally, our data analysis and reliability and validity of instruments are described.

In addition to our integrative search of the literature, an electronic web search of the emergency nursing field for available content endorsed by emergency nursing professional organizations in the U.S., specific to nursing policy and HTN in the ED, was conducted. Hypertension nursing policy was defined as any clinical policy, guideline, or position statement available on the nursing management of ED patients with HTN.

Quality Assessment

A description of our study sample is described in Table 2. The majority of studies included in this integrative review were rated to be moderate quality evidence, as several studies' limitations were due to the nature of the study design. Several studies, including two retrospective chart reviews [14, 17], one observational study [15], and one prospective cohort study [11••] were conducted at either a single site or were limited to two sites within a similar geographic area, limiting generalizability of study findings. Two studies [8, 14] surveyed a moderate sample of ED clinicians; however, both had low response rates, 17–23%. The majority of studies enrolled a convenience sample of study subjects, possibly introducing an element of selection bias. Three studies reported on protocols for randomized controlled trials (RCT) [10•, 12]. Results and findings from these RCTs are forthcoming and have not been published to date.

Results

Search Results

Our search strategy yielded 26 potentially relevant citations. Eighteen of these 26 articles were excluded based on exclusion criteria set a priori, yielding eight preliminary papers that met inclusion criteria and comprised the final set for this review (Fig. 1) [10, 11••, 12•, 13••, 14, 15••, 17•, 18•]. After an electronic search of the web using the Google Chrome® search engine, we identified two active emergency nursing professional organizations (Emergency Nurses Association [ENA] and The Academy of Emergency Nurse Practitioners (AEEN)] in the U.S. exist. Descriptions of the ENA and AEEN are presented in Table 3. To date, the ENA is the only

Table 1 Search terms

Location	Keywords	Limits	*N*=	*n*=
PubMed, CINAHL, OVID, Web of Science	Emergency Department and Nurse or Nursing and Policy or Position Statement or Guideline and HTN or BP	Adult, English language, all trials, peer-reviewed, U.S., 2015–2018	*N* = 26	*n* = 8

Table 2 Description of sample

Study	Purpose	Design/measures	Sample characteristics	Main results	Limitations	Quality assessment (0–12)
Adhikari et al. (2016) [17]	•Determine emergency physician's adherence to American College of Emergency (ACEP) Physicians policy for asymptomatic hypertension in the emergency department (ED)	Retrospective chart review Primary outcome: adherence to ACEP Clinical Policy Secondary outcome: Proportion of patients with elevated BP at the time of discharge and association between pain scores and BP readings	$N = 179$ Inclusion criteria: adult patients (> 18 years) with BP ≥ 140/90 who were later discharged	Primary outcome: 1. Adherence to ACEP guidelines low (4–6%) 2. BP reassessment high (92%) Secondary outcome: 1. Mean BP 150/87; 23% with severe HTN 2. No correlation between elevated BP and pain ($p = 0.35$) 3. Elevated BP persisted in 71% of patients at discharge	Study design; small sample size; non-blinded data abstractors	6: Moderate
Brody et al. (2016) [18•]	•Define emergency physician (EP) approaches to management of asymptomatic HTN in various clinical scenarios •Assess adherence to the ACEP clinical policies	Online Survey Methodology of the Emergency Medicine Practice Research Network Primary outcome: approaches of management of asymptomatic HTN in various clinical scenarios and assess adherence to ACEP clinical policy Secondary outcome: factors that influence variation on emergency physician management	$N = 199$ (response rate 17%) 66% > 10 years' experience; 78% male; 40% worked in academic hospitals versus 60% community hospitals; 78% perceived their patients as having a yearly income < $50,500/year; 51% reported that most patients do not have a PCP	Primary outcome: 1. Gender (female), fewer years in practice, and seeing more patients seen per hour was a significant predictor of adherence to ACEP policy ($p = 0.0008$) Secondary outcome: 1. The higher the BP, the more likely to intervene through medication or referral 2. Patients sent by PCP were more likely to receive treatment (45%; $p = 0.001$), particularly with intravascular anti-hypertensive medications (31%; $p = 0.001$) 3. Patients with past diagnosis of HTN were also more likely to be treated (48%; $p = 0.001$)	Small sample size; non-randomized selection	5: Moderate
Gleason-Comstock et al. (2015) [10•]	•Determine if integrating kiosk-based patient education will improve BP control compared to usual care •Explore the relationship between patient activation, self-management behaviors and health care utilization	Study protocol of a randomized control trial (RCT) Primary outcomes: 1. BP control after 180 days at research clinic visit Secondary outcomes: 1. Patient Activation Measure scale 2. Morisky Medication Adherence Scale	Goal: $N = 200$	No results at this time No mention of sample size calculation No validity/reliability of statistical measures	Potential for attrition due to multi-step intervention	N/A
Goldberg et al. (2017) [11••]	•Assess the reliability of ED triage BP to establish when BP thresholds have been met, using BpTRU device, a highly accurate BP monitor, as the gold standard	Prospective observational cohort study Primary outcome: 1. Accuracy of ED triage BP over various thresholds (> 120/80,	$N = 384$; median age, 39 years; 48.9% women; 66.4% white	Primary outcome: 1. The mean difference between ED triage BP and gold standard measurement was 20.6 mmHg systolic and 6.0 mmHg diastolic	Single center; limited generalizability; possibility for nurse	9: Strong

Table 2 (continued)

Study	Purpose	Design/measures	Sample characteristics	Main results	Limitations	Quality assessment (0–12)
	•To determine whether correct identification varies by gender, race, or triage acuity	> 140/90, > 160/100) compared with BpTRU Secondary outcome: 1. Accuracy of ED triage BP compared with BpTRU by demographic factors		2. At 120/80, 66.1% correctly identified; At 140/90, 74.0%; at 160/100, 88.8% Secondary outcome: 1. There were no significant differences in correct classification of patients by ED triage BP across gender (≥ 120/80, $p = 0.099$; ≥ 140/90, $p = 0.214$; ≥ 160/100, $p = .269$), race (≥ 120/80, $p = 0.595$; ≥ 140/90, $p = 0.829$; ≥ 160/100, $p = 0.835$), and triage acuity (≥ 120/80, $p = 0.588$; ≥ 140/90, $p = 0.996$; ≥ 160/100, $p = 0.506$)	measurement error	
Prendergast et al. (2018) [12•]	•Determine the effectiveness of an ED initiated educational intervention on uncontrolled HTN •Identify the role that EDs can play in secondary prevention of cardiovascular complications	Study protocol of a RCT Primary outcome: 1. Mean differences in BP baseline to 6-month post randomization Secondary outcome: 1. Controlled HTN at 6-months, improvements in HTN Knowledge Survey (validated survey, assesses HTN knowledge in low-literacy patients) and Modified Morisky Scale Health Survey (validated instrument to assess self-perception of medication adherence)	Goal: $N = 360$ (120 per study arm); Sample size based on BP differences; pilot study $N = 120$, representing 6% of expected eligible participants ages 30–64, BP > 160/100	No results at this time	Possibility for attrition due to study design	N/A
Souffront et al. (2015) [13••]	•To identify barriers to referral for elevated blood pressure (BP) in the ED and differences between provider-type	Cross-sectional survey Primary outcome: 1. Self-reported knowledge, attitudinal, and practice barriers to referral for elevated BP in the ED 2. Differences in provider type	$N = 450$ RNs = 150 PAs = 150 MDs = 150 51% response rate, $N = 230$	Primary outcome: 1. RNs report less knowledge of HTN stages (stage 1, $p = 0.043$; pre-HTN, $p < 0.01$), were less aware of HTN definitions ($p < 0.001$), had more difficulty caring for asymptomatic patients ($p = 0.007$), required financial compensation to refer ($p = 0.048$), and perceived BP referrals are influenced by the medical director ($p < 0.001$)	Survey bias; low physician response rate	6: Moderate

Table 2 (continued)

Study	Purpose	Design/measures	Sample characteristics	Main results	Limitations	Quality assessment (0–12)
				2. MDs reported skills ($p = 0.008$) and time ($p = 0.035$) as barriers to refer 3. PAs perceived patients were not aware of health benefits ($p = 0.035$) and doubted their concern for their BP (.023); felt emotionally uncomfortable when referring ($p = 0.025$)		
Souffront et al. (2016) [14]	•Examine the prevalence of asymptomatic HTN •Examine rates of BP reassessment and referral •Examine factors associated with it among adult patients who visit the ED	Retrospective chart review Primary outcomes: 1. Prevalence of asymptomatic HTN 2. Rates of BP reassessment 3. Rates of referral Secondary outcomes: 1. Factors associated with referral 2. Adherence to follow-up	$N = 2367$ met inclusion criteria (patients with BP ≥ 140/90 who were later discharged); of those with asymptomatic HTN: 52.2% male, 41.4% AA, 39% had Medicaid, and 60% presented for a non-urgent complaint	Primary outcomes: 1. $N = 1184$ patients had asymptomatic hypertension (49%) 2. 49% ($n = 580$) of patients with asymptomatic HTN had BP reassessed 3. Only 4.6% ($n = 28$) of patients with asymptomatic HTN were referred for outpatient treatment Secondary outcomes: 1. Referral was associated with no history of cardiovascular disease (OR 1.57; CI 1.02–1.79; $p = 0.002$) and the middle-aged (OR 2.0; CI 1.2–3.3; $p = 0.000$) 2. Of the referred patients, 100% ($n = 28$) adhered to follow-up recommendations	Only two sites; study design	6: Moderate
Winders et al. (2018) [15]	•Determine, among hypertensive patients (BP ≥ 160/100 mmHg) discharged from the ED, the frequency that patients (1) received HTN specific education, (2) followed up with a PCP, and (3) patient beliefs about HTN	Non-experimental; observational Primary outcomes (telephone): 1. Demographics 2. Received HTN education (yes/no) 3. Follow-up (yes/no) Secondary outcomes: 1. HTN Beliefs (BIPQ survey), a validated survey that assesses nine dimensions of illness perception from 0 to 80; higher scores indicate threatening beliefs of an illness	$N = 90$; mean age 51; 66% AA; 42% male; 88% insured; 70% had HTN history of which 66% pharmacologically treated	$N = 51$ met study completion. Primary outcomes: 1. Only 6%, ($n = 3$) with elevated BP receive specific HTN discharge instructions 2. 66% ($n = 34$) reported they were informed of their elevated BP 3. 57% ($n = 29$) followed up with PCP within 2–4 weeks Secondary outcome: 1. Median BIPQ score was 42—patients recognize severity of HTN complications, importance of treatment	Small sample size; limited generalizability	6: Moderate

Table 3 Description of emergency nurse professional organizations

Professional organization	Description of organization
Emergency Nurses Association (ENA)	The ENA is a professional organization that represents emergency nursing and consists of over 40,000 members, examines issues relevant to emergency care, publishes professional guidelines, and issues a peer-reviewed journal
The Academy of Emergency Nurse Practitioners (AEEN)	The AEEN promotes high-quality, evidence-based practice for nurse practitioners providing emergency care for patients of all ages and acuities in collaboration with an interdisciplinary team. This academy establishes guidelines for quality and safety emergency health care; encourages continuing clinical education of emergency nurse practitioners; supports training and education in emergency care; facilitates research in emergency care; and collaborates with professional health organizations and academic institutions.

professional organization that has published and endorsed a clinical policy on HTN in the ED. Thus, our results are narrowed and describe characteristics related to this clinical policy only.Our final multi-modal sample consists of two retrospective chart reviews [14, 17], two observational studies [11••, 15], two survey design studies [8, 13••], and two descriptive design studies [5, 10•]. Individually and as a working group, three investigators (KS, SS, CB) reviewed the literature and considered the findings to be within the context of ED nursing policy and HTN awareness. The same investigative team agreed upon three common themes to present our results: BP reassessment, referral, and practice.

Nursing Policy and HTN Awareness

The ENA stresses that each interaction with a patient or family member is an opportunity to teach and educate the patient and their family about prevention, wellness, and disease management. The ENA recommends strategies to embrace patient education as an essential aspect of ED care, which are described in Table 4 [19]. In 2005, the ENA published a position statement on 'Prevention, Wellness, and Disease Management," realizing that for many patients, a visit to the ED may be their only source of healthcare and education regarding preventive care. The United States Preventive Task Force (USPTF), The Society for Academic Emergency Medicine Public Health and Nursing Policy and Hypertension in the ED Education Task Force (PHTF), and The Robert Wood Johnson Foundation Task Force (RWJF) also recommend implementation of routine ED-based risk prevention by optimizing on "teachable moments" such as HTN screening [20]. More recently in 2015, the Center for Medicare Services (CMS) published an emergency medicine "cluster" to allow for successful reporting of only four measures, one measure (measure #317) being a "cross-cutting measure" focused on clinician documentation of HTN screening and follow-up [21].In 2006 and 2013, the ENA *endorsed* the American College of Emergency Physicians (ACEP) (ENA-ACEP) clinical policy for the treatment and management of asymptomatic HTN in the ED, which is one of the several ACEP clinical policies the ENA endorse to date. This ENA-ACEP policy recommends BP reassessment for any BP reading ≥ 140/90 mmHg and referral to primary care for persistent elevated BP [22]. Our search of the field concluded that of 15 accessible clinical

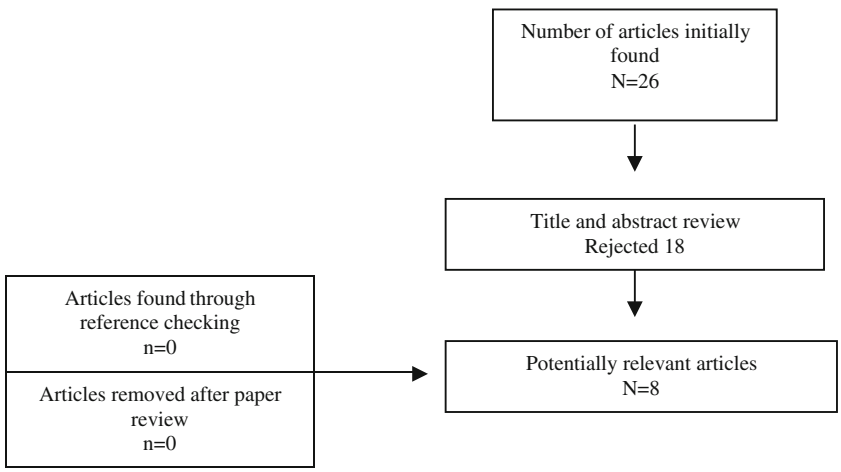

Fig. 1 Search tree

Table 4 Emergency nursing associating strategies to embrace patient education

•Partnerships with consumers and other disciplines to identify needs, set priorities, develop strategies, and evaluate progress in promoting health
•Multi-disciplinary efforts to raise consumer awareness to behaviors and environments that promote health and the growth of primary prevention models for care for the community at large
•Policies to shape and help redirect financial and governmental choices regarding healthcare at the local and national level toward models of prevention and wellness
•Use of the broader definition of health when educating the community regarding wellness and prevention.

guidelines, this clinical policy is *not* available to ED nurses using their website and is *only* available for use by accessing the ACEP website or by conducting a formal search of the research literature.

However, according to personal communication with the ENA, the organization is actively working to make this clinical policy accessible to all ED nurses electronically (ENA Associate, personal communication, February 1, 2019). Clinical policy on technique of BP measurements is available; however, recommendations on the frequency of measurement are left to individual or local policies of the particular ED. No AEEN clinical policies exist for HTN and emergency nursing.

BP Reassessment

The ENA-ACEP policy is clear on their recommendations for BP reassessment after an initial elevated BP reading ≥ 140/90 mmHg. Surprisingly, there has been little systematic study evaluating BP reassessment. Our search of the literature revealed two retrospective chart reviews [14, 17] that examined ED BP reassessment rates following an initial abnormal BP reading. While sample size and BP reassessment rates were markedly different between these two studies, inclusion criteria were similar with both using a BP reading of ≥ 140/90 mmHg as the prompt to evaluate for BP reassessment in patients with persistent asymptomatic HTN. In a large multicenter, retrospective analysis conducted by Souffront et al. [14], BP reassessment following an initial elevated BP reading was relatively low (49%). Souffront et al. [14] found that a majority of patients with asymptomatic HTN were male (52.2%), black (41.4%; $p = 0.000$), middle aged (mean age 50.2 ± 16), and insured through Medicaid (39.8%; $p = 0.000$) in their sizeable sample of 1184 adults from two-academic urban EDs.

In contrast, in a single-site retrospective chart review of 179 adults, Adkihari et al. [17] found a reassessment rate of 92%. This study also found that a majority of patients with asymptomatic HTN were predominantly female (57%), white (60%), relatively young (44 [SD 17.9]), and were uninsured (36%). The marked differences in sample size and characteristics between these two studies make it impossible to generalize these findings to the larger population.Furthermore, the rigor of methodological analyses differs between these studies. While Souffront et al. [14] studied associations between those who received BP reassessment versus those who did not, Adhikari et al. [17] did not specifically study any association of patient characteristics with likelihood of BP reassessment. Souffront et al. [14] found that patients without a previous history of a cardiovascular comorbidity were more likely to receive a BP reassessment (OR 1.09; CI 1.01–1.18). Overall, clinical trials may be developed on the basis of these retrospective analyses, as it documents the scope of a problem and critical relationships between relevant variables.

Referral

For a variety of reasons, adherence to the ENA-ACEP policy on referral for HTN in the ED has remained significantly low. Actual referral rates obtained by retrospective chart reviews range from 4 to 6% [14, 17], discordant to a self-reported rate of referral to be "21–50%," found in a cross-sectional survey using a multi-disciplinary sample ($N = 230$) of ED clinicians conducted by Souffront et al. [13••]. However, only two studies in our sample sought to understand the rationale for low rates of referral for persistent elevated BP ≥ 140/90 mmHg using survey methodology [13••, 18•]. Two studies used a retrospective study design to evaluate referral rates for ED patients with BP ≥ 140/90 mmHg [14, 17], and one study used an observational study design, but with a differing BP inclusion criteria of ≥ 160/100 mmHg [15].

Several studies identified various provider characteristics that increased likelihood of referral [10, 11••, 13••, 14, 15••, 17•, 18•]. Overall, a variety of barriers such as knowledge, attitudes, and practice barriers exist, such as little awareness of the ENA-ACEP policy among nurses ($p = 0.01$), that referral to care is too time-consuming (0.04), or that the ENA-ACEP policy was not formalized in their ED of practice (0.04) [13••]. Factors that facilitate providing a referral include having a previous history of a cardiovascular comorbid conditions (OR 1.57; CI 1.02–1.79; $p = 0.002$) [14], such as chronic HTN (48%; $p < 0.001$) [18•], being a middle-age patient (OR 2.0; CI 1.2–3.3; $p = 0.000$) [14], having a higher stage of BP [17•, 18•], or if there was a referral to ED from a primary care provider (45%; $p < 0.001$) [18•]. Due to the heterogeneity of study designs, study populations, and outcomes, further comparison of results between studies is limited.

Improving BP control in ED patients with uncontrolled HTN requires reliable completion of three steps. According to the ENA-ACEP policy, ED clinicians must first perform a BP reassessment on every patient if their BP is ≥ 140/90 mmHg (step 1); and second, ED providers must refer for outpatient follow up if BP remains ≥ 140/90 mmHg (step 2). Third, there must be successful linkage to ongoing care. Surprisingly, only two studies included in our sample evaluated this most critical third step, and show a wide range of adherence to follow-up to be 50–100%, limiting our ability to draw any conclusions [14, 15].

Practice

Over the past 3 years, there has been a dearth of literature that examines the elements of ED clinical practice and the management of patients with asymptomatic HTN. Only one study to date has evaluated the accuracy of triage BP measurement [11••]. This prospective observational cohort study by Goldberg et al. [11••] specifically studied ED triage BP measurement modality and accuracy. Sample size was adequate ($N = 354$) in this well-designed study, and overall, the study population was young (39 years [IQR 28–51]), predominately White (51.1%), and male (66.4%). Patients were stratified by triage BP into three BP thresholds (≥ 120/80 mmHg, ≥ 140/90 mmHg, and ≥ 160/100 mmHg) on the basis of CMS, ENA-ACEP policy, and other EM literature definitions of HTN. This hallmark study found that ED triage BP correctly classifies 66.1%, 74.0%, and 88.8% of patients for each BP threshold, respectively, demonstrating that ED BP is highly sensitive for HTN outside of the ED visit. There were no significant differences in accuracy of triage BP measurement across gender, race/ethnicity and triage acuity.

Between the years 2015 and 2018, two leaders in the field have published RCT study protocols for improving HTN awareness and BP control in ED patients with uncontrolled HTN [10•, 12•]. Gleason-Comstock et al. [10•] described a study protocol for a behavioral RCT examining the impact of an educational intervention on patient care and clinical practice in ED patients with uncontrolled asymptomatic HTN. This study aims to enroll up to 200 ED patients to examine BP control at 180 days following ED discharge as the primary study outcome. To date, study results from this RCT have not been published. A second RCT protocol, conducted by Prendergast et al. [12•], seeks to evaluate the impact of an ED-initiated screening, brief intervention, and referral to treatment (SBRIT) or SBRIT + post-discharge transition consultation with an ED clinical pharmacist, as compared with standard care, on an ED population with uncontrolled HTN. On the basis of power/sample size calculations, Prendergast et al. [12•] aim to enroll a total of 120 patients (40 per arm). Results of this RCT have not yet been published. Both study protocols will enroll patients with a history of HTN and exclude patients who have undiagnosed HTN.

Discussion

A hypertensive event in the ED is an independent risk factor for adverse CV events, although follow-up to care can significantly reduce this risk [6]. Despite this, our review of the literature did not reveal any clinical trials designed to improve follow-up rates among patients with ED patients with elevated BP readings in the ED, suggesting a major gap in the current literature and thus limiting the scope of our review. More robust trials are critically needed to improve practice and outcomes for patients with uncontrolled HTN. Particularly, clinical trials addressing the improvement of BP reassessment and referral to care are needed, using multi-disciplinary samples of ED clinicians. Furthermore, clinical trials evaluating the successful link of ED patients to follow-up care after the ED visit, particularly in patients *with or without* a previous diagnosis of HTN.

Nursing organizations should work to make recommendations more accessible to ED nurses, who have a significant role in the management of patients with HTN in the ED. For example, nurse champions and leaders in the field are needed to help disseminate research completed on the importance of detection and referral to care for ED patients with uncontrolled HTN and seamlessly translate these new findings to practice.ED nurses are the first, and in many cases the last, person to have contact with an ED patient. Accordingly, ED nurses are uniquely situated to provide HTN counseling and referrals for ongoing HTN care for patients. Further research on methods to improve nursing HTN awareness and referral of this patient population is critically needed and may allow for the ED to provide valuable linkage to treatment at a crucial juncture prior to development of cardiovascular disease. The ED can provide an invaluable health resource for patients, which can aid in not only the detection of HTN but also the successful link to follow-up care.

In conclusion, the role of ED nurses in the screening and referral of this patient population remains largely uncharacterized, even though ED nurse-driven HTN recognition and referral may be one of the most effective strategies for improving BP control among ED patients with uncontrolled HTN.

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Compliance with Ethical Standards

Conflict of Interest The authors declare no conflicts of interest relevant to this manuscript.

Human and Animal Rights and Informed Consent This article does not contain any studies with human or animal subjects performed by any of the authors.

Disclaimer The content is solely the responsibility of the authors and does not necessarily represent the official views of the Mount Sinai Center for Nursing Research & Innovation or the National Institutes of Health.

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11. •• Goldberg EM, Wilson T, Saucier C, et al. Achieving the BpTRUth: emergency department hypertension screening and the centers for Medicare & Medicaid Services quality measure. Journal of the American Society of Hypertension. 2017;11(5):290–4 **This prospective study will have a major impact on the field because it validates the sensitivity of elevated ED BP for HTN. This study emphasizes the importance of HTN screening and referral to care**.
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