

Advanced Practice Provider Perception of Blood Pressure Monitoring
A Qualitative Research Study

Rebecca Noymer
BSHE538 Spring 2020

Introduction & Literature Review

Hypertension (HTN) is a Public Health problem in the United States and worldwide. It is one of the main modifiable risk factors for cardiovascular disease (CVD) and is typically asymptomatic, making it difficult to diagnose early and manage consistently.¹ As of 2010, 29% of adults in the United States had an HTN diagnosis². Of the 29% of adults diagnosed, 53.5% were uncontrolled with a usual source of care. Of these patients, 44.8% were being treated pharmacologically, and 39.4% were unaware of their diagnosis.³ According to the American Heart Association (AHA), Normal BP is anything less than 120/80mmHg. Elevated Blood Pressure is 120-129mmHg for systolic and less than 80mmHg for diastolic. Stage 1 HTN is 130-139mmHg for systolic and/or 80-89mmHg for diastolic, Stage 2 HTN is higher than 140mmHg for systolic and/or over 90mmHg for diastolic. Lastly, “HTN Crisis” is a BP reading of 180mmHg or higher for systolic and/ or a diastolic reading over 120mmHg⁴. Much of the lack of appropriate treatment for patients with HTN is a result of ineffective patient-provider communication, provider knowledge, and clinical inertia⁵. A 10% increase in HTN treatment could prevent 14,000 deaths per year². Treatment for managing BP/HTN is typically considered taking a prescribed medication². Other methods to increase proper HTN control in a clinical setting include using the evidence-based guidelines, improving communication with patients, and using innovative healthcare delivery models³. On an individual level, patients can adhere to medications, measure their own BP, and decrease sodium intake³.

With reference to provider communication, clinical inertia is defined as failure of health care providers to initiate or intensify therapy according to current guidelines. Clinical inertia regarding HTN has increased incidences of CVD deaths^{6,7}. Patient-related factors contributing to clinical inertia include older age, lower life expectancy, multiple comorbidities, psychiatric

conditions, and being near physician targets. Provider-related factors for clinical inertia include, lack of knowledge about appropriate goals, high patient volume, time constraints, differences in physician risk tolerance, ambiguity, and decision making within the realm of uncertainty.⁸⁻¹⁸ In order to overcome these factors, physician perceptions regarding the importance of BP monitoring must be studied.

Positive changes in controlling blood pressure start with interventions at the Provider level. Previous interventions have generally seen positive results. In a meta-analysis of interventions to improve inertia markers, the interventions were heterogenous, however all showed improvements in the markers.¹ One intervention aimed to improve medication adherence through communication skills intervention between providers and their patients. After the intervention, there was no significant changes in outcomes, likely due to a lack of individual feedback for the physicians.¹⁹ A separate communication skills training for physicians in Iran was statistically significant in its improvement in communication skills, hypertension outcomes, medication adherence, and self-efficacy for patients that receive training.²⁰ A third uncertainty reduction intervention was able to lower BP in Clinical Inertia (IC) patients. This intervention reduced physician uncertainty about causes of poorly controlled BP.²¹ Although there have been a variety of interventions conducted globally to improve patient-physician communication regarding HTN and BP control, uncontrolled BP still remains a public health problem. While it may not be an option for all patients, Ambulatory Blood Pressure Monitoring (AMBP) is considered the “gold standard” of BP Monitoring strategies, especially to rule out things like “White Coat” Syndrome, when patients have abnormally high BP due to anxiety in a clinical setting. AMBP is done at home for 24 hours, uninterrupted^{5,7,23}. This is only one method of BP monitoring.

Even with the current methods to monitor and manage BP, there is a gap in the research about physician perceptions of HTN and how they communicate these perceptions to patients via BP management plans. The findings from existing research have been inconsistent. HTN rates and management affect all levels of the socio ecological model. Filling this research gap can positively affect the 29% of American adults living with Hypertension and their Providers. Physician self-efficacy, barriers, and benefits should also be studied to explore causes of HTN clinical inertia. The aim of this research project is to understand how providers perceive Blood Pressure monitoring. It is also worth noting whether these perceptions have implications for BP management communication, HTN diagnosis, and treatment or prescription for adults.

Research Questions

How do Advanced Practice Providers (APPs) perceive Blood Pressure monitoring?

- What does this perception mean for Hypertension diagnosis and prescription for adults?
- How does this perception contribute to Provider communication to their patients about Blood Pressure management?

Methods

Study Design

This study consisted of three semi-structured qualitative interviews with APPs in order to learn more about their experiences and perceptions around HTN and BP Monitoring and Management. The questions were open-ended, and neutral probes were used to illicit meaningful information from the participants. The purpose of this study was to understand how APP's value and communicate BP with their adult patients. I used research from my Literature Review to inform the Interview Guide. As stated in the Literature Review, BP Management is a large issue in the United States, and the provider perspective is an integral part of improving this systemic issue. Throughout the sampling and recruitment process, my population and strategies shifted,

but this did not impact my ability to have meaningful interviews. The details of these changes will be expanded upon in the “sampling and recruitment” section.

Using Qualitative Methods to study this topic allowed for a non-judgmental, holistic analysis and interpretation ²⁴ of three APP experiences working with BP and HTN patients. Qualitative research methods were essential in this study in order to understand the APP perspective and learn about the context in which their experiences occur ²⁴. This method allowed space for explanation, elaboration, and nuances of the medical community. All three interviews were conducted over Zoom video and/or audio and lasted for 30 to 45 minutes. Since this was a class project and was not considered human subjects research, I did not receive IRB approval. IRB protocols were still followed for ethical purposes. In addition, I am CITI certified, participation was voluntary and informed consent was given at the beginning of the interviews. The data has been de-identified by creating pseudonyms and removing other identifying information such as Universities, Hospitals, and Cities. Everything was stored on a secure computer and destroyed upon completion of the study.

Sampling and Recruitment

The study population chosen to understand Advanced Practice Providers’ perceptions regarding BP management include Doctors, Physician Assistants, and Nurse Practitioners who treat adult patients. The research question was adjusted to remove the term “importance” in “perceptions of the importance of...” to avoid leading the interviewees. The providers must have a current license to practice in a clinical setting and treat adults, in order to be included. However, the inclusion criteria did change over the course of my attempts at recruitment. I had originally wanted to only include Providers with over ten years of experience. This unrealistic inclusion criterion. I had also thought including Nurses (RNs) would be beneficial. I realized

early on that RNs would not have the same point of view as an APP, since they are not the primary providers diagnosing and treating patients. After removing RNs, I also decided to change the inclusion criteria for APPs to two or more years of Full- Time work experience. Purposive Sampling was done with the previously mentioned criteria, and this was still too specific. I ultimately included any APP who is certified to practice, regardless of Full-Time work experience. Having an advanced degree ensures that the participant has had significant clinical practice. After changing the criteria, using Purposive Sampling for recruiting participants was not difficult.

As previously stated, the main sampling method used for this research project was purposive, to focus on providers who are qualified to talk about their experiences with HTN and BP Management. All of the recruitment was done via Gate Keepers who were knowledgeable about the participants I was looking to recruit ²⁴. The initial recruitment was conducted using Gate Keepers via Facebook message to friends in the Nursing profession who have access to large medical professional networks. One of my friends who is an RN was able to recruit two of my interviewees for this mini study. Another Gate Keeper was a friend with a cousin who is a certified PA. Additional effort was made during the recruitment process by reaching out to Gatekeepers on Facebook Groups for NPs and PAs. I messaged the administrators for permission to post my recruitment flyer. However, there were no further interactions. In order to screen for eligibility, I confirmed with each participant that they are certified to practice as an MD, PA, or NP, and that they have experience working with adults with HTN.

At the beginning of the interviews, I stated that interviewees are not allowed to speak of specific patient identifying information, no provider details will be linked to results, and no

patient identifying information will be included. For ethical purposes, interviews were conducted in a non-clinical setting. Interviews were conducted in a non-biased manner to prevent a hostile environment. In order to prevent bias, I had a series of “warm up” questions in order to get to know the interviewee. I spoke in a neutral tone without leading questions and allowed the participants enough time to explain their experiences.

Data Collection

In depth interviews were conducted for all three participants via Zoom. Due to logistical constraints, we were not able to meet in person. This limited the nonverbal communication that could be documented. However, it also allowed for flexibility with interview location and timing. This qualitative method of interviewing was essential to gathering the necessary data to address the research question. Participants were given ample time to address their perceptions of BP management. Throughout the interviews, notes and recordings were taken to allow for transcription and coding of the data later on. Transcription and coding were done manually. Before receiving informed consent from each participant, I informed them of my plans to de-identify the data and destroy all records after study completion. I also gave them opportunities to skip questions if they felt uncomfortable discussing. All three participants gave informed consent and were respectful of my request to avoid using names and identifying information of people.

After creating an interview guide, I went through several revisions before the final draft was ready for participant usage. The content remained consistent, however some of the wording, order, and probes were revised to allow for accurate data collection. Some participants asked for clarification for certain questions or probes, and they were able to answer the questions in a comprehensive manner. The interview began with “warm up” questions about their education, career path, and BP training. The questions then moved on to their role as an APP in relation to

BP measurement, diagnosis, and prescription. Towards the end of the interview, questions were related to the role of providers as a population, as well as perceived gaps in knowledge for both providers and patients. Lastly, I asked for final comments and potential solutions for HTN as a public health problem.

Analytic Method

In order to manage the interview data, I used Microsoft Word. After transcribing the interviews and taking thorough notes, I sorted through the data to define potential codes and sub codes. From there, a code-tree and codebook were created. This codebook included six main codes with just over one dozen sub codes. The codes were identified based on important concepts that informed the participants' experiences and perceptions of BP monitoring. The codes were matched in the data using the Microsoft Word comments function. Much of the data was double coded due to overlapping concepts being discussed by the participants. The process of coding took several iterations in order to ensure a comprehensive coding analysis of each transcript and extensive notes. The codebook was guided and validated by the similarities and differences among the three participants. These codes later informed the three main themes which emerged due to extensive discussion in each interview. This confirmation of relevant concepts allowed for confidence in the analysis process.

Results

Three APPs were interviewed individually in order to understand their perceptions of Blood Pressure Monitoring with adult patients. APP Participants one and two are Physicians Assistants (PAs) and Participant three is a Nurse Practitioner (NP) who spent several years working as a RN before receiving a master's degree. All three have recently completed master's degree programs to practice as APPs. Although this research is not generalizable, these interviews suggest that

new APPs perceive BP to be a critical vital sign in guiding patient treatment. This perception of prioritizing BP to improve patient health outcomes presented in three main themes. These themes are Preventative Medicine to Improve Health Outcomes, Patients Receiving Education Directly from APPs, and There is No “One Size Fits All” Approach; and will be extrapolated on in the following section.

Preventative Medicine to Improve Health Outcomes

Participants 1, 2, and 3 consistently mention topics such as lifestyle changes, diet, and exercise as methods to treat and prevent hypertension as a first line of defense before prescribing medicine. There was an emphasis on creating healthy patients through prevention. As Participant 1 says, “if the U.S. starts to focus more on preventative medicine, it would help the healthcare system unbelievably”. By adjusting diet and exercise habits, patients can see significant changes in their health. Participant 1 describes one of the positive parts of her role as a PA:

“...and when they come back in three months, they’ve already dropped like ten pounds, they’re exercising every day, their Blood Pressure is down, their sugars are back to normal, they see that they can do it, we need more people to feel that way, and it is doable, seeing how they feel afterwards... I think is better than medication, it is doable, it just takes that motivation.”

Both Participant 1 and 2 mentioned weight loss as a benefit to these lifestyle modifications. All three APP’s recommend preventive medicine measures during a patient appointment. They state that if a patient has elevated BP, these recommendations will help prevent an HTN diagnosis. All three APPs agree that “elevated blood pressure” is 120/80mmHg or greater, which is of note because these guidelines are frequently changing. Their consistency is informed by medical training. Their communication with patients around preventative

medicine is an ongoing process. According to the participants, BP is a vital sign and should always be taken at the beginning of the appointment. If this is the first time a patient reads a high number, they will first be told to make lifestyle changes. The participants informed me that preventative medicine helps prevent HTN and comorbidities (i.e. diabetes) and other disease risks (i.e. strokes). They explained that preventative medicine has many positive consequences for individual and population health. These positive consequences include lower BP numbers, weight loss, comorbidity and disease prevention. It also allows for a delay in medication prescription by the provider. They explained that HTN medications can have side effects that are unpleasant. All three of the interviewees would prefer to avoid medication management when possible. Additionally, Participant 3 mentioned *“it is important to manage stress and other outside controllable factors”*. This reiterates that there are many factors contributing to HTN that can be identified and modified to improve health outcomes. The APPs in this study perceive Preventative Medicine to be the first line of defense in managing BP.

Patients Receiving Education Directly from APPs

As Participants 1, 2, and 3 spoke, it became clear that patient education is a foundational component of both NP and PA Masters programs and practice today. Participant 3 expressed how education is really important by emphasizing that patients will only be compliant if they understand why they are taking the medications. She said, *“I am very grateful to be a Nurse Practitioner”* because education is a large aspect of the nursing field. She said that they teach students how to properly educate patients, and that taking the time is very important.

All three of these professionals make an effort during patient interactions to ensure that their message is getting across effectively. This comes into play when patients have elevated BP and HTN. Participant 1 said that *“...if they don't ask [about their blood pressure numbers], I tell*

them because I think it's something they should know and be educated [about]". This level of communication suggests that patient education is a priority and that she is not just going through the motions during appointments.

Meanwhile, Participant 3 described how the majority of the population with HTN, that she has interacted with, is elderly. These people all have BP cuffs to use at home, per provider recommendation. She says that they love to share this information with the APPs during appointments and are excited when their BP numbers are healthy. These APPs are taking the time to explain HTN to their patients and educate them on how to improve their health. Based on Participant 3's comment, patients are taking this recommendation seriously, implying effective communication and education strategies.

Participant 2 was the only participant to bring up the possibility of public health information to increase patient education. She thinks that it could be another avenue for patients to understand HTN. She also states that

"...when I'm talking to patients, one of the things that I always try to explain to them is that look you may not feel bad or see changes now but know that your high blood pressure is putting you at risk for a stroke and a lot of people know people who have strokes so that ya know kind of um can put a little bit of context around it".

This explanation emphasizes the effort and adaptability APPs have to ensure their patients are learning and changing from the appointment. Participant 2's above statement shows she is meeting patients where they are, rather than making HTN an abstract, challenging concept to comprehend.

This adaptability in patient education is also shown when the participants discuss different demographics. Participant 2 references how multiple elevated BP readings from a young, otherwise healthy person could be a sign of underlying diseases that must be investigated. Versus, an older person is more at risk and may simply need a BP management medication. Each of these age specific responses is motivated by the desire to improve patient health outcomes and educate them along the way. This suggests that APP's perceive teaching patients about their health as valuable communication.

There is no “One Size Fits All” Approach

The answer to many of the questions in my interview guide were “*it depends*” or “*every patient is so different*” and the like. This was true for all three participants. As this answer was repeated, it became a theme that there is no “*one size fits all*” approach, as Participant 2 said, when working with patients and other providers when controlling BP. Every patient has a different health history, reaction to medications, socio-economic status, and disease risk, among many other related factors. These differentiators create an environment for providers that involves making unique decisions for every patient they see. Since the medical choices for each patient will be different, there is little standard treatment plan for patients with elevated BP or HTN. Both actions and communication decisions will vary, and this variability influences how the APPs perceive BP monitoring. They may view it as a high priority based on one patient's health history, and a lesser issue for someone else. Throughout the three interviews, the APPs described their experiences with this level of variability, along with the variability that exists within provider decision making. Different providers have different communication and practice styles, making it difficult to identify patterns in provider behavior with their patients around BP.

Participant 1 stated that, in reference to taking BP, she *“like[s] doing it in the beginning so that you can tailor the appointment more”*. This demonstrates awareness of variability of all patients. She also told me that the course of action for patients *“...definitely depends on age and background, if they have any comorbidities, definitely tailors the medication”*.

Participant 2 explained this dynamic, in reference to socio-economic concepts as well, such as patients with transportation barriers. She explains that a provider needs two HTN readings to diagnose a patient with HTN. However, if they have barriers to get to the clinic, it may be acceptable to take their BP twice at different points of the appointment to save them the time and energy of coming back for a second appointment at a later date. There is room for further research in the area of SES and patient education around BP and HTN. Participant 2 made it clear that there are people at a disadvantage, and it is up to the providers to modify the appointment to accommodate their needs. It is also important to educate these patients to make changes in a realistic way for their current lifestyle.

The *no “one size fits all” approach* does not only pertain to patients. Participant 3 tells me that *“communication is provider specific”*, meaning that different providers convey information to their patients differently. Participant 1 has seen blood pressure taken at several different points throughout the appointment, although she prefers to take it at the beginning. This adds to the variability in clinical practice, and the frequent response from participants, *“it depends”*. The interviewees raised the importance of patient and provider variability in all aspects of BP monitoring.

Discussion

The results of this study have created questions for future research to study factors related to uncontrolled HTN. Specific populations should be studied to learn about their unique

experiences with BP Management. It would be beneficial to get the perspective of patients, with IRB approval. However, patients in general, is too broad. Based on the three interviews in this study, age and SES are two important variables when analyzing BP management. People of specific age groups are more susceptible to HTN, while others are more likely to have disease risks and comorbidities, and others are more likely to follow treatment plans. There is not enough evidence from these three interviews to confirm or deny these claims. Meanwhile, lower SES patients may not have access to the lifestyle change recommendations such as healthier foods and may also not be able to visit the doctor as frequently due to limited time and resources. Studying these populations by subgroup, through qualitative and quantitative measures, these strata can be understood more fully.

Additionally, each of the participants of this mini study repeatedly brought up comorbidities as an important aspect of BP Management. Comorbidities include conditions like diabetes and high cholesterol. There are implications for further research into how and why patients with comorbidities behave. Having comorbidities puts the patient at higher risk of further disease, death, and being prescribed multiple medications. This collection of consequences has the potential to contribute to BP Management behaviors. However, this remains inconclusive without further investigation.

Although this study did not reach saturation, there were certain perceptions present across all three interviews. All three APPs are recent graduates of a master's program. This implies that they have had access to the most up to date guidelines, regulations, and protocols in their profession. While also implying that they have limited hands-on experience with their own patients. Each one found that older, more experienced providers did not share the same views regarding BP diagnosis and treatment. The guidelines for Blood Pressure assessment are always

changing, and the older providers may not be following what is most up to date. This causes discrepancies among older and younger providers. However, it may be difficult for a younger provider to challenge an older provider due to lack of experience in practice.

. The participants often acknowledged their lack of experience and are aware that things may change when they begin to work full time. Providers with more work experience would likely have a different perspective, and therefore different answers than these three. Although all three stress the importance of lifestyle changes to improve health outcomes related to HTN, they do not have a positive outlook on the United States' long- term health outcomes related to HTN. The participants' perception that there is a low chance of population level changes may be related to the variability of individuals. As this variability could contribute to ineffective patient education and follow up. They have all validated the lifestyle changes that can be taken to mitigate elevated BP. It is unclear if all providers are communicating this to their patients. Further research into provider experience level as it pertains to BP monitoring, management, and patient education would help to fill this gap.

Another limitation is that there were no MDs included in this study. They bring a unique perspective due to a different level of education and practice. As Participant 1 stated, they are overworked, and that is why the NP and PA role becomes more important. Had an MD been interviewed, they may have discussed different experiences with HTN patients and the process they use for diagnosis and treatment. There is room for more qualitative research to fully understand the provider perspective around BP and HTN.

There are also implications for potential Public Health Practice and Policy work at different levels of the socio ecological model. At the interpersonal level, Public Health Practitioners could increase communication strategies in order to educate APPs of the newest BP

protocols and guidelines. They could also establish more strict guidelines for medical practices to maintain up to date on BP Assessment protocols. This would include providing information to all patients regarding HTN risks and preventative measures in a manner that is culturally competent and tailored to the individual. This could include organizational incentives. Lastly, a Public Service Announcement (PSA) about HTN as a “silent killer” could be created. As all three participants mentioned, the fact that patients are asymptomatic for HTN is a barrier for adhering to a treatment plan. This PSA would mention risks associated with HTN, such as potential strokes which can be fatal. As research becomes more conclusive about BP Management, Monitoring, and effective communication, more specific and successful interventions can be funded.

I chose to research the perceptions of APP’s and BP management and monitoring in order to understand the interpersonal communication during a patient appointment and the motives behind this communication. I wanted to learn more about how APPs decide to diagnose and treat HTN. My undergraduate degree in is Health Behavior Science which lead me into the Health and Fitness industry for several years. Part of the curriculum in my courses and internships was around various measurements and contraindications for exercise. BP was emphasized often as being a crucial indicator of a person’s health and preparedness for exercise. This has stayed with me throughout Full-Time employment, as well as a research interest when applying to and enrolling in graduate school. Based on studying this topic and personal experience, miscommunication and discrepancies around BP management is a large issue in the U.S. and globally.

Given my previous, rather pessimistic, preconceived notions about Provider behavior around BP and HTN, I decided to enter the interviews with an open mind and willingness to hear

about the participants' unique perceptions. This gave me the opportunity to listen without judgement and learn about their points of view and treatment plan methodology. Through this approach, I learned that these three participants were much more knowledgeable, articulate, and concerned about BP and HTN than I had assumed they would be. Although this study did not reach saturation and is not generalizable, I am much more hopeful learning that recent graduates are entering the workforce with this prevention and education mindset to improve patient health outcomes on an individual basis. This interview process taught me to focus more on listening and thoughtful probing. My skills and attention improved with each interview. Using qualitative methods, I grew my interview, data collection, and analysis skills. This project also gave me more topics related to HTN that can be explored in future research projects.

References

1. Milman T, Joundi RA, Alotaibi NM, Saposnik G. Clinical inertia in the pharmacological management of hypertension: A systematic review and meta-analysis. *Medicine (Baltimore)*. 2018;97(25):e11121. doi:10.1097/MD.00000000000011121
2. Yoon SS, Burt V, Louis T, Carroll MD. Hypertension among adults in the United States, 2009-2010. NCHS Data Brief. 2012;(107):1–8.
3. Centers for Disease Control and Prevention (CDC) Vital signs: awareness and treatment of uncontrolled hypertension among adults--United States, 2003-2010. *MMWR Morb Mortal Wkly Rep*. 2012;61:703–709.
4. Understanding Blood Pressure Readings: American Heart Association Website. <https://www.heart.org/en/health-topics/high-blood-pressure/understanding-blood-pressure-readings> Accessed April 26, 2020.
5. Dalfo-Pibernat, A., Dalfo Baque, A., Pelegrina Rodriguez, F.J., et al. Improving ambulatory blood pressure monitoring knowledge in nurses and doctors: impact of a training intervention. *European Journal of Cardiovascular Nursing*. 2018; 17(8): 742-750. <https://doi.org/10.1177/1474515118782100>
6. Piper MA, Evans CV, Burda BU, et al. Diagnostic and predictive accuracy of blood pressure screening methods with consideration of rescreening intervals: a systematic review for the U.S. Preventive Services Task Force. *Ann Intern Med* 2015; 162: 192-204.
7. Phillips LS, Branch WT, Cook CB, et al. Clinical inertia. *Ann Intern Med* 2001;135:825–34.
8. Allen JD, Curtiss FR, Fairman KA. Nonadherent, clinical inertia, or therapeutic inertia? *J Manag Care Pharm* 2009;15:690–5.

9. Zafar A, Stone MA, Davies MJ, et al. Acknowledging and allocating responsibility for clinical inertia in the management of type 2 diabetes in primary care: a qualitative study. *Diabet Med* 2015;32:407–13.
10. Basile J. Clinical inertia and blood pressure goal attainment. *J Clin Hypertens* 2009;11(suppl 1):S5–12.
11. Gil-Guillen V, Orozco-Beltran D, Mraquez-Contreras E, et al. Is there a predictive profile for clinical inertia in hypertensive patients? An observational, cross-sectional, multicentre study. *Drugs Aging* 2011;28:981–92.
12. Strain WD, Cos X, Hirst M, et al. Time to do more: addressing clinical inertia in the management of type 2 diabetes mellitus. *Diabetes Res Clin Pract* 2014;105:302–12.
13. Balkau B, Halimi S, Blickle J, et al. Reasons for non-intensification of therapy in type 2 diabetes patients uncontrolled by oral monotherapy in general practice in France: the DIAttitude study. *Diabetologia* 2013;56:S117.
14. Moise N, Davison K, Chaplin W, et al. Depression is associated with clinical inertia in management of hypertension in the primary care setting. *J Gen Intern Med* 2014;29:S65.
15. Salanitro A, Agee B, Burczyk-Brown J, et al. Appropriate inaction and clinical inertia. *J Gen Intern Med* 2010;25:S223–4.
16. Ferrari P. Reasons for therapeutic inertia when managing hypertension in clinical practice in non-Western countries. *J Hum Hypertens* 2009;23:151–9.
17. Mu L, Mukamal KJ. Treatment intensification for hypertension in US ambulatory medical care. *J Am Heart Assoc* 2016;5: e004188. doi:10.1161/JAHA.116.004188.
18. Harle CA, Harman JS, Yang S. Physician and patient characteristics associated with clinical inertia in blood pressure control. *J Clin Hypertens (Greenwich)* 2013;15:820–4. [
19. Saposnik G, Sempere AP, Raptis R, et al. Decision making under uncertainty, therapeutic inertia, and physicians' risk preferences in the management of multiple sclerosis (DIScUTIR MS). *BMC Neurol* 2016;16:58.
20. Manze MG, Orner MB, Glickman M, Pbert L, Berlowitz D, Kressin NR. Brief provider communication skills training fails to impact patient hypertension outcomes. *Patient Educ Couns*. 2015;98(2):191–198. doi:10.1016/j.pec.2014.10.014
21. Tavakoly Sany, S., Behzhad, F., Ferns, G. *et al.* Communication skills training for physicians improves health literacy and medical outcomes among patients with hypertension: a randomized controlled trial. *BMC Health Serv Res* **20**, 60 (2020). <https://doi.org/10.1186/s12913-020-4901-8>
22. Hyman DJ, Pavlik VN, Greisinger AJ, et al. Effect of a physician uncertainty reduction intervention on blood pressure in uncontrolled hypertensives--a cluster randomized trial. *J Gen Intern Med*. 2012;27(4):413–419. doi:10.1007/s11606-011-1888-1
23. National Institute for Health and Clinical Excellence. *The clinical management of primary hypertension in adults. Methods, evidence and recommendations*. Clinical Guideline 127. London: Royal College of Physicians, 2011.
24. Henniker, M., Hutter, I., Bailey, J. *Qualitative Research Methods*. Los Angeles, London, New Delhi, Singapore, Washington DC: SAGE; 2011.