

Swapnil Hiremath:

Welcome to the American Heart Association, Hypertension Treatment Options podcast. This podcast series is part of a larger program addressing unmet needs in hypertension treatment options. In addition to the podcast, this program includes webinars spotlight series, which are speakers presenting grand rounds type presentations, and an update to the Comprehensive Guide on Hypertension, which will be released in January, 2023.

Swapnil Hiremath:

The overall goal of this program is to improve systems of care and understanding around unmet blood pressure needs across the hypertension patient journey. Our formal learning objectives are firstly, to recognize treatment and management options for patients with resistant hypertension; then to apply shared decision making strategies that improve health equity by better engaging patients in healthcare decisions, patient provider communication, and patient-centered care; and lastly, to identify healthcare disparities in hypertension treatment and management. This program is made possible by an education grant from Medtronic Corporation. However, the content has been created and directed by a volunteer planning committee independent of the granter. Today's episode will focus on the topic of adherence. I am your co-moderator for today's episode. I'm Swapnil Hiremath. I'm a nephrologist from the University of Ottawa in Canada. Joining me today is my co moderator, Dr. Rebecca Ellis.

Rebecca Bartlett Ellis:

Hello, I am a nurse scientist and associate professor at Indiana University.

Swapnil Hiremath:

Thanks, Rebecca. Our special guest today is Dr. Niteesh Choudhry.

Niteesh Choudhry:

Thanks for having me. I'm a professor of Medicine at Harvard Medical School in the Harvard School of Public Health. I'm an internal medicine, general internist hospitalist by clinical practice.

Swapnil Hiremath:

Thanks. We have a very special guest today, Carolyn Thomas from Vancouver. Carolyn, can you tell us a little bit about yourself and your patient journey?

Carolyn Thomas:

Yes. Hello, I'm a heart patient. I had a heart attack in 2008, subsequently diagnosed with coronary microvascular disease after that. I got two for the price of one and when they were handing out diagnoses.

Swapnil Hiremath:

And you do a blog, which is Heart Sisters?

Carolyn Thomas:

Yes.

Swapnil Hiremath:

On that note, thanks for being here with us today and sharing your insight. Hippocrates had said something along the lines of keep a watch on the faults of patients, which often makes them lie about the taking of things prescribed. For through not taking disagreeable drinks, forgetting or otherwise, they sometimes die. More recently, the late Dr. Koop, the former US Surgeon General famously said, "Drugs do not work in patients who do not take them." This not taking medications has been termed non-compliance in the past, and now is referred to non-adherence, which leads us into this whole discussion of terminology. Is it compliance? Is it adherence? What is the right term that we should be using and why? Dr. Ellis?

Rebecca Bartlett Ellis:

Yeah, this is a really great question. When we think about the definition of adherence and what it means, we need to be thinking about this concept of shared decision making. That is how we work with patients and have an agreed approach on how we're going to take care of them. I think this is a great opportunity for us to really hone in on what it is that we're trying to accomplish when we are prescribing medications and trying to achieve certain health goals.

Niteesh Choudhry:

Well, maybe I'll just add to that, if you don't mind. I totally agree with Rebecca's comment. It is our paradigm of thinking about adherence is one now of partnership. Concordance is a term that some people use as well, although I would suggest that there's overlapping Venn diagrams. Part of concordance relates to adherence. Part of concordance relates to all kinds of other things like, for example, sex and race concordance between patients and physicians. But this all stems from the original term, which is the one that you offered, Swapnil, which is compliance, which has a very clear connotation of rule following. I am the doctor, I prescribe and you obey. And we have long now thankfully understood that's both an outmoded and an ineffective way to build a therapeutic relationship, so I think the conventional widely used term in practice now is non-adherence.

Swapnil Hiremath:

Thanks, Dr. Choudhry and Dr. Ellis on suggestions on how to open the discussion about non-adherence. Now let's hear from our patient, Carolyn Thomas. Carolyn, how do you think we should open up the conversation and discussion on non-adherence in this setting?

Carolyn Thomas:

Compliance is a term that for many patients is cringe-worthy because it sounds like it's a patronizing word dating back from the good old days when patient followed doctors orders. Now we have patients who don't do that. We probably always have had patients who don't do that. We know that from ancient Greek writing. The Greek philosophers were complaining about these bile patients who not do what we tell them to do. Now we have patients who say, "You know what? I don't want to be called non-compliant because what we know is that every patient has a reason for not taking medications." In our case today, high blood pressure medication.

Swapnil Hiremath:

We know that patients, you give them a prescription and about 5 to 10% of them will not even fill the prescription. They will walk out and they will dump the prescription. And that is for a reason, right? Sometimes we don't communicate the need to take the medications quite clearly. But even over a period of time, we find that slowly, for whatever reason, for they have side effects or they don't notice

any benefit, the adherence rates drop down. There is some data to suggest that maybe at one year, maybe 40 to 50% of patients may not be adherent anymore to that prescription patterns.

Swapnil Hiremath:

The other aspect is whether they are taking the medications on a particular day. Some people are missing their pills. The problem perhaps is even worse when it comes to resistant hypertension where the issue of non-adherence may be higher. Whether this is because the patients who are non-adherent are likely to not have uncontrolled blood pressure, or there is something else that is going on, the data suggests that anywhere from 30 to 40% of patients who are labeled as a resistant hypertension actually may just be non-adherent. The question here is how do we diagnose it? How should we be, think about nonadherence in this setting. I think Dr. Choudhry has written a recent American Heart Association statement on nonadherence. could you expand a little bit more on?

Niteesh Choudhry:

I think there's two related questions that you're getting at, and maybe I'll just take a minute and try and tease them apart. The first is thinking about why this happens. What is nonadherence and why does it happen? The second is how do we identify it? I think those are two somewhat distinct concepts. Maybe to the first of those, I think of nonadherence as a common behavior and effectively a normal behavior. If half of people don't take medications as prescribed, then it can't be abnormal per se. It may be undesirable, but it is quite normal. From that perspective, normal behavior has lots of different influences and it is rarely about one of those. It's usually multiple.

Niteesh Choudhry:

And so, the way that most of us now think about nonadherence is that it's a complex interplay between patients and the healthcare system and physicians, and we all have a part to play in it. As we think about adherence as a construct, I say we put it in those terms. It's not about the patient being bad. It's about the complex interactions and the things that are necessary for adherence to happen.

Niteesh Choudhry:

As far as diagnosing it goes, this is actually harder than it should be. The basic behavior, so to speak, we're trying to identify, is not taking medications as agreed upon. But the ways that we then have to measure it really, in broad terms, get broken down into things we can ask of patients or subjective things, and things that we can objectively measure. What we know, similar to the quote from Hippocrates that you started off with, it's self reported measures if you look across the literature, tend to vastly overestimate adherence. Conversely, if someone says they're nonadherent, they probably are not adherent so you should clearly believe that. In the objective measures, there's a range of things ranging from drug levels to pill counts to using electronic data from health insurance claims. Those tend to be more accurate, but even they have their problems. What we have available to us as frontline clinicians is slightly different than what's available as health systems. And so, we are less-

PART 1 OF 4 ENDS [00:09:04]

Niteesh Choudhry:

... that's available as health systems and so we are left asking questions and as long as we ask questions appropriately and respectfully, that's the best that we can do. But increasingly we have access to some of these electronic records, electronic filling data in our health systems as well.

Swapnil Hiremath:

The normalizing non-adherence, that's a really fundamentally useful statement. Often we ask the patients, are you taking your pills? Someone mentioned to me, is that a better way of framing it is, how often do you forget your pills? That normalizes the behavior that it's common. How often are you forgetting and maybe that I sometimes try that, and maybe that might be more useful in getting a more accurate picture of patient non-adherence. Dr. Ellis, you had something to say.

Rebecca Bartlett Ellis:

I really appreciate the opportunity to normalize the behavior and going back to the conversation that really opened this, is when we think about this from a non-adherence perspective, that it is a conversation, an agreed approach to managing medications and taking medications at the point in time that medications are being prescribed, we open the opportunity to have that conversation and to dialogue with patients about medication taking non-adherence and the assessment of that, should be part of an ongoing conversation. And when it feels like it's part of a conversation, it really helps to open up and for patients to share about their experiences and feel comfortable and not that they're going to be judged one way or another about how well they have been doing.

Niteesh Choudhry:

I love that point and maybe just to pick up on it for just a second, maybe two things, one that Swapnil that you said, the way that if you look to the literature again, and certainly in my own experience asking about missed is easier and I love that idea. Usually we start with something which normalizes it even more, obviously, as in taking medications can be very hard. Many people don't like to do it. In a given week, how many times might you forget? And I think that's consistent with what Rebecca was offering as part of a conversation.

Niteesh Choudhry:

What I would add and where I thought you were headed Rebecca, which I think is extremely interesting, is that there are distinct patterns of adherence and so we have done large scale studies looking at how adherence changes over time. It's not a one and done conversation. So some people are adherent, they begin their medications and they remain adherent. Other people are adherent for some period of time and then they discontinue medications. Other people become erratic and then something happens and they resume taking again. There's these very distinct trajectories of medication adherence, which large studies, run by my group and many others, have demonstrated. So we ask about adherence episodically, but it's important to continue to ask about adherence at every one of those followup visits, just to immunize against future non-adherence.

Swapnil Hiremath:

Thanks, Dr. Ellis and Dr. Choudhry for that perspective on shared decision making from the provider perspective. Now let's hear from our patient, Carolyn Thomas. Carolyn, how do you think about shared decision making from a patient perspective?

Carolyn Thomas:

Every patient has a reason. Doctors may not like that reason. My guess is that most doctors aren't even aware what that reason is. Your cholesterol's too high, your blood pressure's too high. Your A1C number's too high, we have to get that down. So, patients tend not to focus on numbers. They tend to

focus on how they're feeling or there's a long list of reasons. Again, many of which are unknown to doctors. We know this is a huge issue in medicine in terms of patient outcomes.

Swapnil Hiremath:

Exactly. This is something we don't understand necessarily and I think we need a conversation. We call it shared decision making. Is that something that you've experienced from, as a patient?

Carolyn Thomas:

I have readers in my blog who have told me that they have canceled their doctor's appointment because they know that their numbers are not going to be good. Cost of medications is a real issue for some patients and yet, I'm a heart patient who takes blood pressure medications and have done for many years and not one doctor has ever asked me, "Are you still taking your blood pressure medication?"

Swapnil Hiremath:

How can we do a better job?

Carolyn Thomas:

That's the question, isn't it? There was a really interesting study published in the New England Journal of Medicine by Dr. Lisa Rosenbaum, she's a cardiologist out of Boston and she did a study on this very subject. Why are patients not taking the meds that we prescribe for them? She says she had an interesting quote, "I wanted to believe that if patients knew what I know, they would take their meds. But what I've learned is that if I felt what they feel, I'd understand why they don't. My suggestion would be to see how we can phrase that, to reframe the benefit so that the patients can see it. How does it affect my body? Not, how will it get my numbers down so that decades from now, I might be in better health."

Swapnil Hiremath:

One of the things you mentioned was as a patient, when you look at the pills, they remind you that you are a patient and that's something I have never thought about until I read that, right? It's a constant reminder that you are not like any other person on the street. Do you want to say something about that aspect?

Carolyn Thomas:

There's a very interesting urge within most of us, I think, that we want to be a person, again. We're tired of being patients. We're tired of thinking about this. We want to be just a person. One issue that's often brought up among patients is trust. If I have a longstanding relationship, I am more likely to trust this person. So if they say, "Here's what I think, here's what I would recommend for you," my trust in a person who I know is much higher.

Carolyn Thomas:

Now, sometimes we don't have that luxury. You may see this person in emergency, or you may see him because it's a specialist that your GP has referred you to. So, maintaining that trust, even in the first few minutes, not talking about your symptoms, not talking about your drugs, not talking about your low numbers that we're going to fix today, but finding out if you have grandchildren, where do you live?

Where did you grow up? It's that little small connections that will make people say, "This person is interested in me."

Swapnil Hiremath:

Absolutely. It's all about the human relationships. That's really so important that it's not a once and done diagnosis. It's something we have to keep in our mind at every contact, at every clinic visit. Is it about, take the pills. Some people have pointed out that perhaps it's also inertia on our aspect, right? It's some therapeutic inertia, perhaps. What do you think about that?

Niteesh Choudhry:

I think you're totally right. I'll add a slight color to this. Across studies, we think that non-initiation or therapeutic inertia, non-prescribing by us as clinicians, frontline contributors, is every bit as common, if not slightly more common, than non-adherence by patients, at least in the case of hypertension. In other cardio-metabolic conditions, that balance skews a little more to non-adherence, than to non-prescription. But of course, in hypertension, we're generally talking about multiple medications that have complexities and interactions and their unique side effects. So prescribing is a little bit more complicated than for example, statins in the case of hyperlipidemia.

Niteesh Choudhry:

So I think we first need to acknowledge that there is more than one thing. It's not only the patient. Several years ago, I wrote about stop blaming the patient and I think that's really what we're talking about here. But what I would add to that, and at least from my personal evolution of thinking, is that if you think about these behaviors, if we thought, non-prescription or inertia, that's a doctor problem.

Niteesh Choudhry:

If we think about non-adherence, that's a patient problem. That characterization is incomplete. And that if you think, we negotiate with our patients and come to therapeutic agreements. Some people are willing to accept treatment, if we recommend it. Some people ask us to initiate treatment and so even the act of initial writing of a prescription, is not exclusively a physician task. Conversely, if a patient experiences side effects, medications are too expensive, they have some other undesirable attribute, then they can't continue to take that medication with our help in terms of changing it. So it's not just them taking their medications, it's our partnership with them continuing along. All this to say is that I very much agree that it's more than nonadherence and the interplay between doctors and patients really applies to both non-initiation, non-intensification, therapeutic inertia, as well as non-adherence.

Swapnil Hiremath:

Negotiating, that is true. We are offered negotiating and it's about an agreement between the patient and us. We talk about shared decision making and when I'm looking at someone who has high blood pressure, and I'm trying to cut...

PART 2 OF 4 ENDS [00:18:04]

Swapnil Hiremath:

... making. And when I'm looking at someone who has high blood pressure and I'm trying to convince them, "Hey, you should be taking your pills," I'm often talking about high blood pressure increases your risk of stroke by so many percentage 10 years down the line, or heart failure, kidney disease, or what

have you. Patients may have a different perspective, right? Their goals and my goals may not be aligning. So we talk about shared decision-making, but sometimes, it's just a word. Do you have any strategies about how we approach these discussions?

Rebecca Bartlett Ellis:

One of the first ways to begin that conversation is to ask what our patients goals are. That is a good starting point, especially when there is an opportunity to explore what their perceptions are about taking medication. It's very difficult to have a focus on prescribing medication when there are beliefs by that patient that they don't want to take those medications. Beginning there is a really good place to start, and exploring what potential thoughts are behind why there is a barrier to taking medications or doing other approaches, I think that is a great way to get to know your patient, to really have an individualized and personalized approach that will most likely result in the best and positive outcome for that patient, depending on what the decisions are.

Niteesh Choudhry:

And yet, what we do as evidence-based prescribers, in particular in cardiology, it's actually quite ironic. There are more and more medications which are all evidence-based. So we can think about heart failure and GDMT, heart failure with reduced ejection fraction, GDMT and acute coronary syndrome, GDMT and diabetes, GDMT and hypertension, and we quickly come to this place where a patient could very legitimately be on 15 or 20 evidence-based medications. So now, if we imagine that we don't like pills, and maybe we take a few, whereas some patients' experience is that they take many, many pills, it's perhaps not at all surprising that they would find it unpalatable, just like we do.

Niteesh Choudhry:

And so, as we approach this problem, I think the idea of negotiation is really the right construct, but not because we are trying to necessarily convince them that we are right, but that we want to understand what they would like. And there are two little bits to amplify there. One is that the reasons people may not want to may, in some cases, be things we can address.

Niteesh Choudhry:

For example, in the case of hypertension, my patients have long told me, "I don't want to become addicted to my antihypertensives," and, "My blood pressure's better. I can stop taking it now." Any variety of things that are fundamental to hypertensive treatment which are obvious to clinicians but not obvious to all patients, those are things that we might address, and so understanding their motivations will help us with that.

Niteesh Choudhry:

The second, as we begin to think about how do we improve this problem, there are a wide variety of options, but one of them uses principles of shared decision-making but uses behavioral interviewing techniques, like motivational interviewing or versions of that, like brief negotiated interviewing. We're eliciting patients' preferences, providing potential solutions. Eliciting their reactions to those solutions may well be more effective ways to engage them and empower them to take control of their own health.

Swapnil Hiremath:

Carolyn, how do you think about shared decision-making from a patient angle?

Carolyn Thomas:

Shared decision-making is a really important aspect of this, as opposed to a doctor handing you a prescription and saying, "Here's your prescription. See you in three months." We know that the patient's goals are not to get their numbers down by two points, but what are the patient's goals? Well, the patient's goals may be that, "If I can keep my blood pressure down low enough, I won't have a stroke." So sometimes, we can tie it in.

Carolyn Thomas:

For example, many heart cardiac event, they have firsthand knowledge about what it's like to be there. Their personal goal might be, "I don't want to end up like my sister." Patients have told me that they have certain really debilitating side effects from their statin drugs, like they can no longer carry the laundry basket up the stairs. Those examples are really good things for a doctor to know, so it's important to you to do this, "How can we work together? What changes can we make?"

Carolyn Thomas:

There's an example of a doctor's goal that may not sync with the patient's goal at all. The patient only wants to live until the daughter walks across the high school stage at graduation day. That's valuable information that can determine and also involve the patient in the decision.

Swapnil Hiremath:

We do know that there are some associations with non-adherence. What kind of a patient profile fits with non-adherence? Is this something that we should be thinking along those lines, or should we be thinking about non-adherence for every patient encounter? For example, when I have a younger patient whose blood pressure is high, non-adherence immediately jumps up in my head saying, "Maybe this person is not taking their pills." If I have an older patient who's been in the healthcare system for a while, I often do not think of non-adherence. Is that a right way of thinking, or is this something we should be focusing on for every patient?

Niteesh Choudhry:

Yeah. Tough question. Non-adherence is normal, and so from that perspective, if half of people, including us, are not taking our medications, then we should think about non-adherence in everybody. That said, non-adherence is actually most relevant only for those people who are not meeting therapeutic goals. So if my blood pressure is perfectly fine and I'm not taking my pills, then maybe I shouldn't have been on the pills to begin with. And so we should care a little less about non-adherence in that case, and we should congratulate our patients or me for achieving my blood pressure targets, and that should be that.

Niteesh Choudhry:

But then if we get into the bucket of suboptimal disease control, based on at least guideline targets, understanding that there is still negotiation, even in what optimal disease control is for any one patient, less clear than perhaps it could be. Then there are a variety of risk factors, and suffice it to say that even those risk factors, which relate to sex, to race, to what pills look like, to how many times you have to take a pill, they're not single constructs in and of themselves. Across studies, there are some sociodemographic groups that are less adherent than other sociodemographic groups, but that's not because that's an inherent property of those individuals. It reflects the underlying barriers, as in cost

sensitivity, perceptions, side effect profile, forgetfulness. Any of a variety of other underlying reasons for non-adherence are really rolled up into those sociodemographic profiles.

Rebecca Bartlett Ellis:

I would agree, and this is a complex question to answer. One thing that I'm not sure that we have, at this point, really said clearly is that non-adherence or adherence, whichever way you want to look at it, is a process. There are multiple points along the continuum of medication-taking that can influence the extent to which individuals are taking medication as prescribed. It's difficult for many people to translate what occurs in a clinic encounter into action, and those behaviors that are required for medication taking occur in different contexts. It requires that individuals interact with pharmacies, acquire their medications, and we know that there are many barriers that exist there, cost, transportation, and time, and then translating that then into a routine in the home environment in which individuals are consistently and routinely taking those medications. All of those are things that we need to take into account.

Rebecca Bartlett Ellis:

The other thing that, in my experience, we often take for granted, that people will automatically be able to translate what we are prescribing in that clinic encounter and know exactly what to do, when to do it, and how to do it. That can be quite complex. Sometimes, it may be the first time that they've ever been prescribed a medication that could be the blood pressure medication, or it could be that they were prescribed short-term medications in the past, and so their experiences are that it is a short-term medication that's going to cure a condition and that, "I only need to take it for a short period of time." So I think that stepping back and recognizing it is...

PART 3 OF 4 ENDS [00:27:04]

Rebecca Bartlett Ellis:

I think that stepping back and recognizing it is very complex and an opportunity for us to really make it a personalized approach with our patients is an important step.

Swapnil Hiremath:

Especially if you're taking 15 and 20 pills, I'm sure it's easy to forget taking the occasional dose and perhaps those smart pills or having pills in a dose set or a pill pack may be useful for some patients. So there are different approaches you're absolutely right about individualizing this for different patient segments.

Niteesh Choudhry:

Maybe I could respond to that. I think you're totally right. Obviously I agree with this fundamentally. What I just wanted to throw into the table is that it is rarely one thing alone that for patients, the cleanest one thing is, "I completely forgot," or, "I really can't afford my medications. I have to make a choice between milk or meds." These are true barriers and they're the most commonly cited barriers in the literature for non-adherence. But those things then, to lesser extents, also occur as parts of other packages of barriers which leads to some complexity in making solutions which perhaps says, if you look across the literature, why have solutions not work super well.

Niteesh Choudhry:

So let me give you an example. If I have to make a choice between spending 20 or 30 or \$40 for my prescription medications per month, when I am experiencing side effect because of them or I don't believe that they are working or I don't think that they're important or I have to somehow figure this out in the chaos of my life, I've got to take care of my kids, they get to work, maybe I work multiple jobs, then cost becomes an even bigger barrier. It's not only something I don't like to do for other reason and it costs me money. That sounds like a losing proposition. No thank you. And so as we develop solutions, I think we just have to acknowledge that it's really more than one thing for many individuals.

Swapnil Hiremath:

Are there any tips that you have found apart from spending more time and trying to understand your patients perspective, improving adherence and helping pay do better?

Rebecca Bartlett Ellis:

In my work and in my experience, habit formation has been a valuable approach to supporting that day to day medication management and oftentimes when we are implementing any kind of behavior change, whether it is trying to eat in a more consistent healthy way, or we are trying to improve our sleep or exercise, or if it is taking our medication, is that doing extra or doing more creates more work and then becomes a barrier for us to engage in that behavior? So if we can look at what we're already doing in our daily routines and embed our medication taking into those routines, it is more likely that we're going to be adherent and take our medication on a regular basis. For example, if you brush your teeth every day, that is a consistent routine that when we embed the medication taking with that other behavior and the medication is an accessible location where we brush our teeth, it is more likely that we'll see an uptake of a better habit.

Niteesh Choudhry:

Yeah, I love that concept. I think we have long thought of helping people become adherent as a cognitive exercise. I made the comment a few minutes ago about motivational interviewing or brief negotiated interviewing or behavioral interviewing. These are methods that are meant to help patients understand their own barriers and solve them and these are all evidence based approaches, so it's not like they don't work. I think of toothbrushing and adherence in a slightly different way. If we ask how many times a day do you brush your teeth? Most people will say probably twice and if you ask, "Could you imagine going to bed without brushing your teeth?" And most people would say never. Could you imagine going to work in the morning without brushing your teeth and most people would say never or I always brush my teeth, and that's really habitual. We've habitized somehow the idea of teeth brushing and what that means is that there's an automaticity to it.

Niteesh Choudhry:

There is intent. I have to put the toothpaste on my toothbrush. I need to brush my teeth. I need to put the toothbrush back where it belongs. I am thinking about it, but it is part of my routine that I could never imagine not doing. So I think this is a very promising space in adherence, and there are behavioral theories about how to do this that relies on repetition before it becomes habit. We need a cue of some sort. Sometimes we need rewards. And so I think these are powerful. For me, they're part of a broader set solutions, some of which are in physicians and clinicians control and some of which are not.

Niteesh Choudhry:

And so as we look to solutions, I think we need to parse that. In the scientific statement that we produced last year, we tried to parse out who the stakeholder is and what solutions they could offer and maybe just briefly for physicians, for example, or prescribers, more generally we can ask about adherence, we can prescribe lower cost medications, we can prescribe simpler medications, we can make recommendations to help with habitization. As in pill boxes, alarm systems, putting the pills by the toothbrush or the coffee pot or whatever habit formation tool might work for an individual.

Swapnil Hiremath:

This has been a fantastic conversations. Do you have any concluding thoughts? I'll let Dr. Ellis go first.

Rebecca Bartlett Ellis:

I really appreciate the opportunity to talk amongst this great group and to dialogue about how we have individually made a difference in our practice and working with patients in the research that we do and I think that this is a great opportunity to begin a conversation among colleagues that will then carry on and foster that relationship with our patients. I think that's truly the best approach for us moving forward is to build those relationships, to view medication taking and prescribing as part of a shared decision making process where we are building that partnership with our patients. Thank you.

Niteesh Choudhry:

Thank you. It's been delightful. This has been a fascinating conversation. I think what I would offer as concluding thoughts are really this construct that patients and physicians exist in a broader system and that within the patient physician context, there are things which we can clearly do better, but this also occurs in the broader context. And so non-adherence and improving the quality of prescribing and medication use is really everybody's problem. It's not just the doctors, it's not just the patients, it's not just the nurses, it's not just the pharmacists. We all have our parts to play and that a truly holistic solution to this means that we do our part, but we also then build systems that support us in this work and that includes the patients of course.

Swapnil Hiremath:

Indeed, the patients are at the center of everything we do. With that final note, I would like to thank Dr. Ellis and Dr. Choudhry for today's podcast and as well thanks to Carolyn for providing the patient voice on this topic, which is really close to your heart as well as for patients with hypertension everywhere. We hope you join us for our next episode.

PART 4 OF 4 ENDS [00:34:37]