

Pedalling Through Practice - Crayons & Conversations

Jessica Hello everybody! My name is Jessica.

Nicole And my name is Nicole, and we are the hosts of the Pedaling Through Practice podcast.

Jessica Oh, and why is that our name? Nicole.

Nicole Great question Jess. So, our podcast comes to you from the Pediatric Language Learning and Speech Outcomes Lab, also known as the PedLLS Outcome Lab, directed by Dr. Karla N. Washington. And this podcast is here so that we can all have some time to sit down with our coffee or on our drive and just get caught up on some of the latest research in the world of speech language pathology, particularly in children's speech and language development. So just like our name, the PedLLS Outcomes Lab and pedals on a bike, this podcast is going to keep you moving forward one research, study or research conversation at a time.

Jessica This being our first episode, I think that it's proper if me and Nicole introduce ourselves. My name is Jess or Jessica and I am a CDA at the PedLLS Outcomes Lab. For those of you that don't know what CDA is, it's an acronym for Communicative Disorders Assistant. So, in our practice, we can work with, um, speech and language therapy, or we can work in audiology for some people in maybe the States or outside of Ontario, uh, because this is mostly an Ontario based acronym- we could also be known as a speech-language pathology assistant. So my role at the lab, I'm the clinical interventionist. So, I do some of the speech and language therapy sessions for some of the projects that we have. And I'm also a project management support. So that's my role at the lab.

Nicole Yeah. And my name is Nicole. I'm a speech language pathologist and a PhD candidate in the PedLLS Outcomes Lab, and I work primarily with children who have speech sound disorders, but I also work with children who have language disorders as well. And we are very excited to be doing this podcast together and getting a chance to dive into some of the research coming out of our lab and some of the amazing labs around the world. And I also should say that we have our producer here with us, um, Dr. Adhirai Garibaldi, and she is going to be behind the scenes, but she might pop in here or there. Uh, so that is who we are. And should we give them a bit of a breakdown of what these podcasts are going to look like?

Jessica Go for it. -Nicole is very organized, so she's had it all down pat.

Nicole I like structure actually, because I'm not organized and structure helps me feel more organized. So, I thought it'd be nice for us to have a nice structure for our podcast. We have two types of podcasts we're going to be doing. One will be interviews with researchers and one will be breakdown of research articles. Today we're going to do a breakdown of a research article. So we're just going to have a conversation, um, where we chat about the article, talking about the background, the research aims, what the methods were, what our results were and why it's really important, a little bit of discussion around that clinical implications. Um, so that's what we're going to be doing. And today we are going to be starting with um, a paper that is actually my first author publication. So I'm really excited to be talking about it today.

Jessica But yeah, and I'm so excited to hear more about it. Um, so what was the title of this research?

Nicole Right. So this paper is called "Beyond Test Scores" using drawings and language samples to characterize multilingual children's language profiles. Um, it is by myself, um, Nicole Bazzocchi Leslie Kokotek, Kathryn Crowe, and Karla Washington. And I do want to say this is a published article. Um, and if you have any difficulty accessing this article, maybe you don't have access to, research libraries. Please feel free to give me an email. We have our, emails in our show notes, and that will give me the opportunity to send you a complimentary copy of the article. We don't want anyone not having access to this research just because of a paywall, so we cannot post this anywhere. But I can send you a copy if you email me directly. So if what we're talking about today sparks your interest and you want to read even further, feel free to get in touch.

Jessica Wow, that sounds great Nicole. um, okay, so I guess now let's start off with the- I mean, the question that I have on my mind, why drawings for a speech and language assessment?

Nicole Yeah, that's a really good place to start. So, um, I think that in the world of speech-language pathology, we do often learn about children's communication experiences more through proxy means. So often we will, uh, talk to their parents, talk to their teachers, do direct assessment. And this is all really

valuable information, but it's not as common for us to directly engage young, young children to learn about their experiences from their voices. And if we think about the United Nations Convention on the rights of the child, articles twelve and thirteen do say that children have the right to be involved in decisions that affect them, and they have the right to share and seek information in any mean that is accessible to them. So the reason that we're looking at drawings is because we're looking at children here as young as three years old. So drawings are familiar to them. They are something that are fun and kind of something they do on a daily basis. And it's a way that maybe children who don't have the words to put all of their feelings or experiences into words. It gives them maybe more accessible option to share their communication experiences. So drawings have been used in other fields, but they've been used a lot less in the world of speech-language pathology. Um, and so that was one of the things that we were looking at.

Jessica Yeah. And I must say as well to that point that I actually am a drawer, an artist, if you will. Painter. Um, what other means? But, um, I find that there are a lot of times where I'm trying to convey some sort of idea that I have in my head, and people don't get it, and then I draw it down and then it- it- it almost can't be put into words. So I can understand, why you would want to use this for children that, maybe have these speech and language difficulties. Right. Yeah.

Nicole Exactly. And there's also a lot of researchers that are doing this in the world of speech-language pathology that have found that children who are typically developing or have speech sound disorders or are multilingual have actually been able to successfully use drawings to share their communication experiences. And so that's a lot of promise for this work as well. Right. And I will say, um, I have seen Jess' art. It is very, very good. Uh, and, you know, sometimes a three year olds art is not going to look quite like that. But that's why we need the research to figure out how do we use drawings appropriately? Because, uh, you know, a three year old might not be as adept with the pen or the paintbrush, if you will. There are articles and research into drawings, but what we haven't seen a lot is the population that we looked at in this paper, which is children from Jamaica who speak Jamaican Creole and Jamaican English.

Jessica Well, may I ask why that population? What made you guys choose that population specifically?

Nicole Yeah, that's a great question. Um, a lot of our multilingual research does look at children who speak languages that are quite different from each other. So think about English or Spanish, English and French. Right. And that's really important because we need to understand multilingual development. Because we can't compare a child who is monolingual to a child who is multilingual. Yeah. And when I say multilingual I should specify we use that as saying two or more languages that they speak. So we kind of use bilingual, multilingual interchangeably to capture children who do speak two or more languages. Um, but just as it can be dangerous to characterize a multilingual against a monolingual, it's also not good to characterize a multilingual against another multilingual who speaks a different type of language pairing. So Jamaican English and Jamaican creole is very different from English and Spanish because they share a lot of vocabulary, they share a lot of syntactic structures, they share a lot of features, but they are also distinct languages. And because they're distinct languages, they have different rules that are going to look different, um, to a monolingual child.

Jessica And, where do you find that these children are speaking, um, Jamaican Creole versus Jamaican English?

Nicole Yeah, yeah. No, that's a good question too, because, in Jamaica, these languages do have more of a societal and cultural role, where the Creole is often more used in the home, in the community, it's more of the social language, whereas English is used more in academia and formal settings for children is the language of instruction at schools, and it's also the language of reading and writing. Because the creole has historically been an oral language with only an orthography or a writing system developed in about two thousand and nine or so. So it's a relatively recent writing system. So that definitely also might impact how these children experience their languages and when and where they use their languages.

Jessica So I find it really interesting that you say that because in my personal experience, I'm Italian Canadian. Um, Nicole is as well, actually. And, you know, my personal experience from my own language. I mean, I speak Italian, and there's these dialects that usually would be spoken, you know, in your home and in your community versus when you go to school. There's this, um, this what what's the word again? The pre-the-

Nicole Um, prescriptive. Prescriptivist. Yeah.

Jessica Prescriptivist language that is used only like the standard Italian that's used in schools. Right. So I think that it's also important to note that, people can kind of translate this into their own personal languages as well.

Nicole Yeah. And I think that's exactly the idea. Is that something like Italian, um, like a standard Italian with a dialect of Italian, is going to probably act more similar to a Jamaican Creole Jamaican English speaker than it would to a English and Spanish speaker, because of those them being closely related. Yeah. And that's the idea, is that we want to expand our understanding of multilingualism by also looking at closely related languages. Yeah.

Jessica So why is this important to study this difference between you know, I know you explained that there are different types of multilinguals. Why is it important to be researching these types of multilinguals.

Nicole In the field of speech language pathology. I'm sure a lot of clinicians, speech-language pathologists listening out there know that a lot of our assessment tools, a lot of our research comes from children who speak one language. They're monolingual. And so if we assess a multilingual child using tools that are designed for monolingual child, then there is it really puts those children at risk of being both over and under identified for speech and language disorder.

Jessica Oh- Yeah

Nicole So under identification tends to happen when a bilingual child gets, you know, any errors or things that are happening written off as, oh, well, they're just bilingual, so they're still learning the language or it's because they're bilingual and so they actually get under identified and might be diagnosed late or miss out on treatment that they need. Yes. And then an overdiagnosis happens when something that is a typical feature of a multilingual speaker might be, assumed to be an error. So if we think about a child who speaks Creole in English. Yeah. In the in English, we call the body part that we use to walk legs. Yeah, right. Um, in Creole, you could call that legs. But if I was talking about legs and I was a Creole speaker, I could also say leg. I could say foot, I could say leg dem I could say legs. So there's lots of different ways I could refer to that body part. Yeah. And if I, as a speech language pathologist, I'm not familiar with that. I might misinterpret their typical use of a different word as an error. Yeah. And diagnose them as having a disorder. Right. If that happens a lot, because we know that multilingual speakers, they do, their languages do interact. And so we see elements of one language influencing another and vice versa. In order for us to be able to reduce misdiagnosis, we have to understand typical multilingual language development. And then also what? Atypical multilingual language development looks like. And we have to be careful not to make too narrow of a scope of multilingualism.

Jessica And I think that was a good point as well, because even when you're explaining the vocabulary usage, especially here in Canada, people will, take a word from their native language and then bring it to Canada and kind of anglicize it and then use it in English speaking. So I could understand exactly what you're saying. Whereas like if somebody is using one of those words and an SLP or a speech-language pathologist isn't familiar with this, this would definitely help clarify and stop those kind of misdiagnosis.

Nicole Yeah, and that's exactly what we're going for. Yeah. Um, speaking of which, should we talk a little bit more about this paper? The specific aims?

Jessica Yeah, I would love to hear.

Nicole So, that background helps to set us up for the aims of this paper, which is really to understand how multilingual Jamaican Creole Jamaican English children express their communication experiences using drawings using a self-rating tool, and we also look at their language skills through a language sample analysis. So we're kind of getting a chance to look at drawings and self-ratings in a group of typically developing children, and in a group of children with developmental language disorder, to give us an idea of what these tools might look like in both these populations.

Jessica All right. So then let's dive into those research methods then like what did you do here.

Nicole All right. So we in this study we had a bit of a smaller sample size. So we had ten typically developing children, nine children with developmental language disorder. And they were all Jamaican- Creole, Jamaican-English speakers living in Kingston, Jamaica. Okay. Okay. So each of these children did two sessions. They did one session in Creole with a Creole speaker, and they did one session in English with an English speaker.

Okay. So the only difference between these sessions was the language that the assessor communicated with the child in.

Jessica Okay. So you know what else I wanted to ask actually, is it the same person that's speaking both languages or are you using different SLPs?

Nicole Good question. So in these studies we had different SLPs. So there was a Creole speaking SLP and an English speaking SLP. And so, the Creole speaker actually was a bilingual Jamaican Creole Jamaican English speaker. Okay. The English speaker actually only spoke English. Okay. So the English environment tends to mimic a bit more what we would see in like a North American context where the SLP might only share one of the languages with the child, maybe the school language. So in our case in Canada, um, a lot of the times the speech language pathologists are English speakers, and the child they're working with speaks English and another language. So that does kind of mimic that a bit. And is, similar to what we might see here. Okay. Okay. Um, here's what the session entailed. Okay. I'm just going to focus on the parts that were relevant to this study, because in these sessions we did do other activities. Um, but I'm going to kind of focus just on what they did that we used in this paper. Okay, okay. So in these sessions, the kids did a language sample. Majority of the language samples were narrative based language samples. So the children looked at pictures, told a story, answered questions about the story. But a couple of the children also did a play based language samples. And this really just depended on, uh, the protocol that was in place the year we got these data. Because this was this data was pulled from a larger project that has spanned multiple years. Mhm um, they also all the children did a drawing. So, uh, if you want, we can dive a bit more into the methods of those drawings, because I would love, after someone listened to this podcast for them to be able to think I could do this in my session. So I want to make it clear how easy and accessible this type of an assessment tool is. So they did the drawings and then they also completed the speech participation and activity assessment of children. This is a free, accessible tool that has been translated into many languages. And we will link the website in our show notes. But it's also a great tool and we can dive into that a bit more.

Jessica Yeah, honestly, I would love to hear about it because I- I mean, even though, I'm a CDA, so I won't, I can't really do assessments. Like I would love to hear about how it's conducted.

Nicole Right. Okay. So let's start with drawings. Yeah. So the drawings we followed the Sound Effects study drawing protocol, which is outlined in detail in the McCormick et al. Article from twenty twenty two. And we will link that article in our show notes. Now this is a very simple process. The first step is just to collect the drawing. So you would sit with the child. You would give them a piece of paper and ten markers. And it's it's pretty, um, specific to the point where you even hand the child the paper at an angle so they can choose if they can draw landscape or portrait.

Jessica That's something I wouldn't have even thought about, right?

Nicole I know it's one of those, like, little details where you're like, you're really giving the child the full control to decide how they're doing this drawing. Yeah. And you give them access to, like, ten different colored markers. And what you do is you also have a piece of paper and the same colored markers in front of you. Yeah. You're going to invite them to draw. So saying something like I want you to draw a picture for me, is it okay if I keep it when you're done? Because you want them to know you're going to keep the drawing. You don't want to upset them at the end. You want them to know, um, and then if they say no, you can always photocopy or try to find a way of working around that. Um, but yeah, you ask them that, and then you say, draw a picture of yourself talking to someone. So you're just inviting them to draw a picture. And while they're doing that, you're actually going to use the markers that you have to make an exact replica of their drawing. So as they're drawing, you draw the same thing. And this is actually something, again that I never thought of. Whereas when you're asking a child to draw, you want to honor that drawing. You don't want to then go up and mark it with notes or things like that. So drawing the replica as they're drawing gives you the opportunity to do a couple of things. One, if they make any comments that are really relevant, you can note that down on the paper as you're drawing, um, note what they said. And two, when you're doing the interpretation, you can use that drawing to also make notes on what they said they drew. Okay. So this helps you be able to take more notes without ever ruining or defacing their drawing. Yeah. So you give them about five minutes to draw, and then you're going to ask them questions about their drawings because we don't want to over interpret their drawings. Yeah. Like I said, they're not all Jessica's. They're not all going to have amazing skills that we might not be able to know what they draw, but we just want to know what they meant to draw. Yeah for sure. So this protocol also has a list of questions. Things like who did you draw? What are you talking about there?

Where are you in that drawing. So, things like that to help understand what they meant to draw. And then the last step of this process is your interpretation. So you're going to look at the drawing, the responses that they gave and your replica with any of your notes. And you're going to use that to do your interpretation.

Jessica So tell me then how would you do the interpretation.

Nicole Okay. So that's a great question. And I think that from our research we used themes that had been pre-developed. Again we'll link the article where it was pre-developed in our show notes. Um, and there were three main themes that we were looking for in drawings. Okay. And these themes were did they draw themselves talking and or listening? Could that drawing : express talking or listening? Did they draw themselves talking to family or friends? And did they draw themselves expressing themselves happy while talking?

Jessica Okay. Okay.

Nicole Got you. So these are the three themes. These are kind of the things that are, you know, the big picture items. What is the main idea of that drawing? But then there's also focal points that we looked for. And focal points are more things that your eyes get drawn to. Okay. So things like are there, um, you know, elements of talking and listening like ears or mouths. Do they have, facial expressions? What colors do they use? Are there any signs of negativity like scribbling over a mouth or not including a conversational partner or elements like that? So these are all pre kind of established themes and focal points that we used in our interpretations.

Jessica So we talked about drawings. But now let's talk about that self rating tool that you mentioned. What was that.

Nicole Yes it's called the SPAA-C or the speech participation and activity assessment of children. Uh again like I mentioned, freely available, translated into a lot of languages. So it is a great tool. Essentially, Um, I'm going to speak only to one portion of it, which is the child self rating. And what this is, is it's ten questions, and it has a visual Likert scale. So, like happy face for happy, a sad face for sad. A middle face that is just in the middle- and it's kind of a straight line. And I will say that using this clinically, a lot of my kids go when I say oh, how does this person look? And they'll say, happy. And I'm like, what about this one? Sad? And I say, what about this one? And they go, uh, mid. And I'm like, okay, so that is like a new, uh, a new slang term, but uh, they get what it means. So yeah.

Jessica Yeah.

Nicole Um, and then the last two faces are one is a blank face. So they could add any other emotion that they feel or a question mark, meaning, I don't know. I don't know how that makes me feel. And the tool really asks them to talk about how they feel communicating with different people and in different environments. So things like how do you feel about how you talk? How do you feel when you talk to your best friend? How do you feel when you talk to your sister or brother? How do you feel when your teachers ask you a question? So those are the kind of questions that are asked, and it gives the opportunity for children to respond by pointing, circling, coloring, saying it. So it just has a lot more options to elicit those types of responses and start that conversation, right. So if a child tells me, um, you know, I feel sad when my teacher asks me a question in class, then that's a good opportunity for me to say, tell me more about that. Yeah, right. How do you why do you feel that way? And so it kind of opens those conversations in a bit of an easier way.

Jessica Yeah, one hundred percent. I think that's great too, that it has, um, those visuals as well, for reasons that we talked about before in this podcast. Yeah. Um, you know.

Nicole So we did kind of talk a bit about how we analyzed our drawings, looking at the themes and the focal points for the space. We looked at the emotions being expressed, were they positive emotions, negative emotions or neutral emotions? And I will say that these types of categories are not a judgment on the type of emotion. Right. Like it's not bad necessarily to have a negative emotion. Yeah. So it's not like a judgment on the experience. It's just a category of, you know, if someone says they're angry, would you think that is more a positive or a negative type of emotion? Okay. Right. So that's kind of what those categories represent. And then for language sample analyses we looked at some measures looking at mean length of utterance. So how long are their phrases. And we looked at this in both words and morphemes. So for listeners out there who aren't familiar with morphemes, that's kind of um, if you think about a word and you think about anything that gets added to that word like an 's' to make a word plural, like 'dog' to 'dogs'. Um, we looked at those types of

elements, and the reason we looked at both just words and morphemes is because words tends to be a bit more culturally responsive for children who speak languages that don't have, um, obligatory morphemes, so they don't have to add things like an 's' when they're talking about plurals. Um, and that is what a creole language is like. You don't they don't have to add the 's' for a plural. They don't have to add, um, 'ed' for past tense. Yes. And so that's why we looked at the length of utterance and also just words. We looked at their total number of words, and then we looked at their index of productive syntax, which is another LSA measure. So language sample analysis measure that has been shown to be culturally responsive to multilingual children. And I'm not going to dive into the details too much I'm sure you don't want to know about how we did all of our transcription and reliability and, all those more specific details, all the statistics, all those things. But we do have that all available for you to read. So if you would like to hear more about that, we will. But just for the sake of time and maybe what you're kind of wanting to learn about this paper, we'll jump over to what we found.

Jessica Okay. Yeah. So I want to know what the results were from this. Okay.

Nicole So first off, I'll just say we did see differences in drawings between children who were typically developing and those who had developmental language disorder. But I want us to keep in mind always that this was a bit of a small sample size. So what we're seeing are definitely trends. Um, and we did see some statistical significance, but we also want to keep in mind that we don't want to, you know, generalize too much. What we're seeing. Yeah. But we know that it is in line with other research. and that if we continue this work, we're likely to have more robust, um, understandings. So what we did see was that children with typically developing language. Yeah. They were more likely to include all three themes in their drawings than children with developmental language disorder. Okay. And specifically what we saw.

Jessica Sorry. Could I ask you again, what were the three themes?

Nicole The three themes were? Did they express talking or listening in their drawings? Did they express themselves to talking to family or friends? And did they express themselves as happy while talking?

Jessica Okay.

Nicole Okay. So the typically developing children tended to have all three themes more often than the children with DLD. And another thing that we saw was that children who had developmental language disorder have a difference between what they drew in Creole versus what they drew in English.

Jessica Oh, do you mind telling us what kind of those differences were? Of course.

Nicole So you asked me earlier about the social cultural role, right. So, um, what we saw was that children actually included the themes more often in the Creole drawings than they did in their drawings in the English context.

Jessica Okay.

Nicole And we don't know why for sure yet. Again, small sample size, but one of the things that I think might play a role is that we know that Creole is the social community language, and that English is the academic formal language, right? And so it might be that children who have language difficulties are finding that their language is more taxed in an academic environment. Right. They're experiencing maybe more frustrations with being able to understand or produce what they're expected to produce compared to a social community home environment where their messages are maybe understood more often, they're able to get their messages across. So that could be one of the reasons why we see that they they seem to have less positive emotions in a English context compared to the Creole context.

Jessica Well, I would also comment on that, that probably in an academic context as well. They maybe feel like they have to be a little bit more careful with their language. Right. Or that they're being judged maybe for how they're using language. So I could see that being um, for, for a difference as well. Whereas I feel like, you know, if I'm talking to my, my family and I make up a word, right? Because, you know, I can't think of the correct one. It's not like I'm being, told, okay, no, this isn't the word. It's actually this one, right? It just kind of goes over in conversation. You kind of move on. So I could see how, you know, maybe an academic setting with, um, a different language would heed those results.

Nicole Yeah. Yeah. And there was previous research that did find this kind of social role in research, whereas Doctor Washington, she did a study. and they actually found it was only with typically developing children, but

they actually found that those children included more conversational partners in their drawings in the Creole contexts, than they did in the English context. Wow. Again, really highlighting that social cultural role of that language. Right. So, um, there's we don't know for sure why this this difference is happening, but we are seeing that difference. And I think for an intervention perspective, when we look at that, what the spa see the results of those, then that helps us to understand, okay, where might we have to set goals for this child who's having language difficulties and make sure that they feel more confident and supported in their language use?

Jessica Yeah.

Nicole Um, and then speaking about the SPAA-C one thing that we saw, which is a positive, was that majority of children reported feeling happy with their talk. Yes. Right. And that's something that, as, um, people in our field is what we want, right? We want children to feel happy and confident and to be able to speak and use their language in ways that they feel serve them. Yeah. Um, we did see that again. In keeping with what we saw in the drawings, children that had developmental language disorder did tend to show more negative or neutral responses in the Jamaican English context compared to the Jamaican Creole context. So we're kind of seeing a similarity in what we saw in the, um, drawings, reflected again in how they rated their communication on that SPAA-C So we're seeing some similarities in how they're expressing their communication. And then another thing that's interesting to note is when we think about those language sample analysis scores. Yeah. Right. Because so of course what we saw was that children with typical development had higher language sample scores than children with developmental language disorder. Right. But it's important to note that there were no differences across groups when we looked at their the child's score in English compared to the child's score in Creole. Yeah. Right. So if we think about the developmental language disorder group. There's no differences in their language abilities across these two contexts. Right. And that's what we would expect because if you have a disorder, you have it in all the languages you speak.

Jessica Yes. Yeah.

Nicole But even though there's no difference in language abilities, there is a difference in the way they're experiencing communication based on the language that they're using. Yeah. So that is kind of one of the reasons we really have to understand. We can't only rely on test scores to inform our intervention goals and outcomes, because if we look at a multilingual child and expect them to experience communication the same in every context, regardless of what language they're speaking or who they're speaking to, and really, any child, they might have different experiences with communication based on context. Yeah. Um, then then we are going to maybe not develop as effective of an intervention plan for them. Whereas if we can really think about this child within their own individual context and think about the needs that they have within those contexts, we will be able to develop a more effective, a more individualized and a more meaningful, um, intervention plan for that child. And by having that child draw and tell us explicitly how they feel, they are actually having input into what goals are going to happen and what's going to be important for them within their therapy process. Even as young as three.

Jessica You know, I actually love that you said this because when I first started as a CDA, I was working in mostly AAC. And I've noticed that when we're working with AAC, we really dive into, okay, what are the contexts that this child is going to be in? Um, you will they be at home where, they have a certain food that's relevant for their culture, you know, and because you have to you're giving the child the words that they would need in their environments. And so you're really diving into their background, their history, um, and what they need language for. But talking about this, I'm realizing, like a lot of the times with our children that we're, you know, doing language goals for or speech goals for. We're not thinking about we're not driving as much into that kind of clinical sense of, oh, where is this child going to be going? How can they be using language? We just kind of what's the word that I'm trying to say? I know what you mean.

Nicole And I think so. One of the things that Dr. Washington is really well known for, and some of her work that has had such incredible impact, is her championing of the International Classification of Functioning, Disability and Health, which is the ICF. Yeah. And, um, this is one of the reasons I love working with her is her passion for helping children, um, by considering them as a whole person within their own context. And really, the ICF does that, right? It says we can't look at just a child in that silo like you just mentioned. We also have to help them be able to participate in life. We also have to help understand what is going on in their environment and how is that going to impact, and how can we maybe intervene there as well. We have to understand what their personal factors are, what's going on with this child, specifically, what language do they speak? Where do they use those languages? How do they use those languages? So all of these kind of, um,

elements need to be considered. Uh, and so if you haven't looked at Doctor Washington's work, I would highly recommend checking her out because, not only in the world of the ICF, but also within, a lot of the work happening on Jamaican children's language and speech skills, work happening with neuroimaging, acoustics. Like, there's so much that she's done, um, that really help us understand better how to do holistic assessment.

Jessica Yeah, I think that's a great point. Um, and I think that's a great place to maybe.

Together: Wrap us up.

Nicole Yeah, I think I'll kind of give a little, last little blurb.

Jessica Okay!

Nicole Of, um, you know, just a reminder that this was a study that, did have a smaller sample size. But we did see, we used rigorous statistical methods to make sure we were accounting for that sample size. So we did see some promising results here and how we can use drawings. And I hope that when we went through the methods, you saw that it's a pretty simple process, only takes about seven minutes or so to do. Um, which, you know, as someone who in my clinical world, we only get about forty minutes for assessment, which I know for some might be a lot. And for others you're thinking that's way too short. It is something I manage to do in all of my assessments. So, I think it's a feasible tool. And please feel free to check out our show notes. We're going to have links to the articles we mentioned, the protocols, the resources. And we look forward to seeing you all back for our next Pedalling Through Practice podcast, where we dive into another research paper.

Jessica All right, guys, let's keep it pedalling. Let's keep it moving forward.

Nicole Keep it moving. Keep it pedalling, folks. Have a great day.

Jessica Bye.