Breaking Barriers: Empowering Social Connections in Older Adults with Hearing Loss

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Welcome to today's course, Breaking Barriers Empowering Social Connections in Older Adults with hearing loss by Dr. Brian Taylor, the Senior Director of Audiology for Signia. This month on Audiology Online, we are celebrating innovation in the hearing industry with our fifth Industry Innovation Summit. Thank you for joining us today and we hope to see you in further classes this month. We would like to thank our title sponsor, CareCredit, and all of our sponsors that are partners that have been with us this month and I most sincerely like to turn the presentation over to Dr.

Taylor. Thank you so much for joining us today. Dr. Taylor. Thanks Melissa.

Great to be with you. I am. I got a lot of material to cover so I'm going to get right at it. The title of my course you see there on the slide, we're going to talk about social connections and how important they are to people, especially as they age and, and for those that have hearing loss. Before we dive into the material, just a few obligatory slides around the risks and benefit of attending classes like this.

Here are the learning outcomes. We'll address these separately in another slide in just a moment, but they're here for you to see. I am the Senior Director of Audiology at WS Audiology. Over the last five or six years I've primarily been involved with the Signia brand. I'm also the editor of Audiology Practices, which is a quarterly publication of ada.

Very business oriented publication. And I'm the editor at large at Hearing Healthcare and Technology Matters. And I would encourage all of you, if you haven't done so, to go to this Week in Hearing at YouTube and subscribe to our channel. This Week in Hearing we have a lot. I have a shout out to all of my colleagues there.

They do an outstanding job of bringing bringing current, relevant, interesting information to the professional organization, to the professionals out there. Anyway, here are the three key questions. I like to provide questions to kind of get started here and then dive into the material after I show you the

questions. This gives us a little bit of direction of what we're going to talk about today. So I want to talk about what is social connectedness and why that might matter to virtually anyone in our society, but especially for those that have hearing loss.

I want to talk about how hearing loss affects social connectedness. So we'll review some research in that area. And then finally, and probably most importantly, I want to talk about how clinicians can promote better social connections in the way that they assess and treat people with hearing loss. Let's go way back in time to give us some Context here. We talk an awful lot about innovations in our field, and rightly so.

There are plenty of great innovations out there. It seems like every year or two you see some pretty remarkable progress being made around telehealth, around electronic circuitry, inside of hearing aids, artificial intelligence. But if you were living, say 150 years ago, this would be a great innovation, the ear trumpet, which has been around for a long time. But the innovation that you see here, if you look carefully at the ribs on the side of the, on the, through the middle of the trumpet there, that's an indication that this is a collapsible ear trumpet, which was a really big deal back, you know, several decades ago in the 19th century. So it's there to remind us that innovation is.

Innovation is always with us. And put it in context. I also want to spend a little time going back to, all the way back to 1834. There was a very famous, at the time, sociologist. I put that in parentheses or in quotation marks because sociology really didn't exist as a profession.

Very interesting British woman who spent some in the United States by the name of Harriet Martineau. She also happened to be hearing impaired. And she wrote a famous manuscript called Letters to the Deaf, talking about the social challenges related to hearing loss. Now remember, this is in 1834, so almost 200 years ago. And at the time she mentioned four social challenges.

And I'll review them. The first was stigma of wearing devices. And I'm kind of paraphrasing here, but some of the things that she says in the manuscript, Letters to the Death. I dread when people, shopkeepers say things like, I dread it when people come in. They're looking for something that's small, that no one can see to make their problem invisible.

The second social challenge, physicians lack of awareness. Again, paraphrasing from her Letters from the Deaf. But there is nothing I can do to help you. It's best to simply learn to live with it. Third challenge, music appreciation.

And she basically says in the manuscript, I might as well give up everything, give up enjoying performances because there are indulgences that I really don't have the, the patience or they're not worth the trouble because of my hearing loss. And then finally, the fourth social challenge that she goes into depth about is why bother meeting other people? I don't wanna. It's not only a burden for me, but it's a burden for others. And why would I want to burden others with my problem?

So these were the four social challenges back 190 years ago that she wrote about. And by the way, Naples and Valdez in my references is where you can read a current version of this. But if you move up to 2025, almost 200 years later after she wrote that Letters to the Deaf publication, I think we would all agree that remarkable progress has undoubtedly been made. But I think what's really interesting here is that the four shortcoming almost 200 years ago in some shape or manner are still with us today. I think all of us would agree that stigma is still a challenge.

The stigma of aging, the stigma of hearing loss, the stigma of wearing hearing aids definitely has improved over time, but it's still there. I think we could also make the case that physicians often still undervalue hearing loss. We could also say that music does remain a challenge, especially when it comes to optimizing the sound quality of it in hearing aids. We don't have time to get into why that would be, but it still remains somewhat a challenge, I would argue. And finally, and the one that I want

to focus on today is this one.

Social isolation and loneliness are at epidemic proportions today across society. And undoubtedly it remains a problem for people that have to cope with hearing loss. So this first section, where we really dive into the material here, I label it the crisis of connectedness. And what I mean by that is within all of our society. And there's all kinds of references to this in mainstream publications.

If you listen to podcasts, if you read the newspaper, there's all kinds of talk about this crisis of connectedness. And I thought one person, sort of a social media influencer, Austin Pearlmuter, M.D. has podcasted about this, has written about this in some of the mainstream publications like Psychology Today. So he's kind of a nice place to start by talking about the science of being social. And I think all of us know and have some familiarity with the fact that humans are inherently social, that we're wired to thrive in social environments, and that can impact us in negative ways if we don't have the socialization that we need.

And of course, social isolation and loneliness, which is a lack of being social over time, are detrimental to our health. He even talks about in depth how it increases the risk of depression, anxiety, cognitive decline, and either an even higher mortality. So it's really important for all of us, I think, in society, set aside your hearing care profession, your obligations there, but for all of us to play an active role in trying to improve connectedness with our friends, family and colleagues, and even acquaintances. And of course, in the scientific literature, I think There is a theme around this crisis of connection. There is data out there.

You can go to the National Academy of Science, Engineering and Medicine. You can go to some of the things that the former Surgeon General published a year or two ago and find data to support that. One in five Americans report being socially isolated. So again, set aside hearing loss and look at society writ large and you can see that this becomes quite a problem. In two years ago, the US Surgeon General

report talked about the consequences of chronic long term social disconnectedness, talked about it as a risk for early death, and he equated it to smoking 15 cigarettes a day.

So you can kind of see there the health or risk involved with being socially isolated and lonely. And then finally we know that and others have said this based on the data, social disconnection really is an urgent public health problem. So what do we mean by social disconnection? That's a term that I'll probably go back to a few times. It's kind of an umbrella term that describes a couple different things that are happening.

The way I think of social disconnection is it's some combination of loneliness and social isolation, which of course are very closely related, but are not the same thing. There is some overlap, as this slide would suggest, as the schematic would suggest. But loneliness and social isolation are really two components of this larger term we call social disconnection. Of course, I think it's important to kind of talk a little bit about what's the difference between loneliness and social isolation. And it's easy to find these definitions online.

I'll give you my simple definition of each. Social isolation is simply a lack of social connections or a lack of a social network. And in a little bit we'll go into some details about what is a social network. And then loneliness is really the emotional consequences of maybe being socially isolated. But it's, you don't have to be lonely to be socially isolated, and you don't have to be socially isolated to be lonely.

Loneliness. This really implies, though, an emotion or a feeling of being alone or being separated. And I don't think clinically in hearing care, we have to be so concerned about who's lonely and who's socially isolated. But I think we do have to be concerned with the fact that there are a lot of our folks out there that we see that probably do deal with social disconnection, be it loneliness or social isolation. And our job is to kind of tease out how big of a problem it is and try to help them fix it.

And also to realize that hearing loss might be making the problem worse. So as I mentioned, social disconnection or just plain old connectedness is probably is a combination of those two components. Now if you look more carefully at the audiology literature, Larry Humes and Barbara Weinstein have written an awful lot about auditory wellness and social wellness. And I think this is an interesting concept that kind of gets at social disconnectedness. This is a schematic from one of Larry's papers published a year or so ago, looking at the different components of well being, you know, back in 1839 or whatever it was when Harriet Martineau was writing her letters to the deaf.

I can guarantee you that people weren't talking about well being. But in the era of modern medicine where people live longer and healthier lives, well being in the present age is highly important. And as you can see from this schematic, there are several components to well being or wellness. Emotional, spiritual, environmental, and then you see on the right hand side, physical wellness, psychological wellness, social wellness, and at the bottom, emotional wellness. And Dr.

Humes in his paper makes the case that auditory wellness really is interwoven into those various components of well being. And of course I think the big takeaway message is auditory wellness is much more than somebody's audiogram or their word recognition score, which is shown here in the next slide. But before I get there, I think social wellness is really what I want to focus on today. And some of the drivers of social wellness you see there listed on the slide, somebody's ability to maintain supportive relationships, their enjoyment of life, their involvement of activities are all components of social wellness. And of course good auditory wellness is an absolute necessity, I think, to maintain good social wellness.

So that's social wellness. Let's now look at auditory wellness. And again I think that the main idea here is it's much more than the pure tone average on the audiogram. Although this schematic tells us that hearing wellness is part of it. But in addition to that, it's your as a person's ability to process complex

non speech sounds, enjoy music, enjoy the sounds of nature.

It's the ability to process speech sounds to enjoy or to, to be able to capture and appreciate the emotions in somebody's voice. And it's the ability to localize sounds in space. So those are the four components of auditory wellness. And Larry makes the case that good auditory wellness does not guarantee, I mean good hearing wellness. What you would find on the hearing on the audiogram does not guarantee good auditory wellness.

And in the typical clinic it's estimated that about one third of adults age 50 or older with normal audiograms will have poor auditory wellness. So the question really here is that the audiogram kind of falls short of assessing and telling us about somebody's overall auditory wellness. How do we assess auditory wellness and kind of indirectly, social connectedness? How do we do that in the clinic? I think we can make the case that it should be done in the clinic because typical tests that we have in our, in our toolbox aren't effective.

And really the answer to that is what I want to talk about in the next section. So in this next section we're going to talk about hearing connectedness as it relates, I mean, social connectedness as it relates to hearing loss and how hearing loss and a patient that's dealing with it, how they might show up in your clinic. So I guess the idea over the next several slides is how can we better understand and assess social connectedness and how someone's hearing loss might be impacting it or their auditory wellness might be impacting it. So to really tackle this, I thought it would be helpful to kind of share a common occurrence that everybody sees. I think often in their clinic.

You're sitting down, face to face with a patient, obtaining a case history, having a conversation about what might be impacting them. And in this scenario, maybe the grandmother is sharing this with you. She's in there for certain, for care, and she's sharing a scenario that as follows, where she smiles throughout the holiday dinner and everyone that but everyone is not being, is not really can tell

everyone is seeing that she can't follow the conversation. And I think you've all had patience explain this kind of scenario from you to you fairly often. And she says things that are off topic that make her kind of look foolish and silly.

And in this example, maybe her daughter asked her, have you heard from Faith, her cousin, recently? And the grandmother irritably responds, yes, I washed my face this morning. So this is an example, I think, of how hearing loss over a long period of time has some serious emotional and even behavioral consequences. And I think that little vignette is a nice way to talk about what I call the lived experience of hearing loss in people that are experiencing normal aging. This reminds us that it's more than just the audiogram, but that gradual hearing loss has some effects on negative emotions.

That effects can lead to maladaptive behaviors which can lead to some pretty serious health related conditions. For example, gradual hearing loss in some cases could lead to greater fatigue, frustration and other negative emotions over time. Those negative emotions Experienced day in and day out can lead to behaviors like withdrawal and isolation. And then in some cases those negative behaviors can lead to some serious medical conditions, health related conditions like loneliness. And of course when you look at the lived experience of hearing loss this way, I think it, it kind of reminds you that the physical, the, the actual hearing loss, the way it affects the cochlea in the cortex of the brain can, has psychological and as we'll talk about next, has some significant social consequences.

So what I want to do over the next couple slides is kind of just briefly review the data that, that demonstrates to us that hearing loss does have an effect on social isolation and loneliness. And so I divided this section up into three different chunks. We have some evidence that comes from review articles. This One is from 2020, this is by the researchers at Johns Hopkins, a systematic review that showed that hearing loss is associated with loneliness and social isolation with the association being stronger for hearing loss and social isolation. We also have a scoping review that was published in

2021 by Bott and Gabby Saunders that indicated that hearing loss is associated with both social isolation and loneliness.

And I think what's interesting in their scoping review is that they found that that association occurs throughout the lifespan. It's unrelated to the degree of hearing loss. And when patients describe the consequences of their hearing loss according to their scoping review, they're more often using language that's describing social isolation rather than loneliness, which I think might indicate that loneliness might be a little bit stigmatizing and people are maybe more reluctant to talk about it. So those are a couple of review articles. There's also a handful of population based studies which used a large number of evaluated or analyzed data from several hundred individuals, often over a long period of time.

So here's one, I think this one comes from Stanford group. At Stanford they followed almost 6,000American adults over a nine year period. And they concluded through their analysis that hearing problems were associated with weaker and smaller social networks. Here's one from Japan looking at 4700 adults indicating that loneliness may accelerate the incidence of disability in adults with hearing loss. Here's one, this is part of the Achieve John Hopkins study.

And one sub one component of that study was following and analyzing data as far as how hearing loss was associated with loneliness and, and social networks. And they found through their analysis that hearing loss is associated with greater loneliness and smaller network sizes. And then finally a study published last year from in US from some data from Australia, a survey of you can see 7,400 Australian adults age 50 and older self reported hearing loss that was significantly small found that those with self reported hearing loss tended to have significantly smaller and less supportive social networks compared to those with self reported normal or corrected hearing loss. So again, the trend is pretty apparent here in these population based studies and also in some recent observational studies. Here's

one from Beck Bennett.

This is a focus group kind of a qualitative analysis where 21 adults with hearing loss describe several negative consequences including social overwhelm, fatigue loss, exclusion and emotional distress. Here's one from Jack holman in the UK involving 17 adults who were interviewed. And they described several negative emotions associated with hearing loss, including frustration, anger and social overwhelm, and that those negative emotions affected the quality of their relationships. And then finally, this is one from the University of South Carolina that showed that participants with poor scores on the words and noise tests exhibited greater social isolation. So again, here the trend is very clear and apparent.

We have a preponderance of evidence that shows, I would say a fairly substantial link between age related hearing loss and social isolation and loneliness. And the general conclusions are that untreated hearing loss does contribute to reduced social network size. It contributes to negative emotions that and those negative emotions can lead to poor quality relationships. And we're not going to get into the details of this, but I think another trend in that data is that social isolation from hearing loss may indirectly contribute to cognitive decline and depression. And of course, because we're seeing such a clear trend in the data, I would say it's certainly worth your time to assess an individual's risk of for being socially disconnected.

And that's what I want to talk about next. So considering just how threatening it is to have hearing loss that might contribute to social isolation and just how much of a problem social isolation and loneliness is to quality of life, which was bared out in all of that, those studies that I summarized. Let's talk about how we might go about identifying and treating people that have challenges with social network size, with the quality of social networks, and might be dealing with feelings of loneliness. And so the argument I want to make here is that you just can't go through the routine assessment without maybe

adding a few new wrinkles in your toolbox that help you more carefully and thoroughly evaluate somebody's risk for social isolation and loneliness. And so my goal here is to encourage all of you to take away a couple of new tools or wrinkles that I'll talk about that will help you do a better job uncovering these individuals that might be at risk for suffering from these conditions.

So how do we change our assessment process? What new wrinkles might we add? And also I'll talk about in a little bit how this knowledge of the relationship between social disconnectedness and hearing loss might change or cause us to rethink how we select and fit hearing aids. So before we dive into some new tools that you might want to consider that help us more thoroughly assess individuals at risk for social disconnectedness, I want to share with you, I think, a really interesting framework that was published, published last year by some psychologists up at the University of Toronto. I think this was actually published in Trends in Hearing.

And I, I really like this framework because it kind of helps us better understand sort of the continuum of how somebody goes from maybe dealing with some negative emotions because they're frustrated or embarrassed because they misheard the conversation. Sort of like that vignette I shared with you a few minutes ago, how they move from, from that to being socially isolated and maybe at risk for being alone. So this framework kind of tells us or shows us how people become socially isolated over time. Social disengagement is sort of the first step that leads to social withdrawal and that leads to social isolation. So this is a very simple, straightforward framework that I think helps us better understand in the time domain how social isolation might occur.

And one of the really interesting aspects of this framework, according to the authors, Mottola et al. Is that as, as, as people move from social disengagement to withdrawal to isolation, the contribution that hearing loss makes in that continuum actually lessens over time because as people age and as they possibly become more withdrawn and socially isolated as a result largely of their hearing loss,

contributions from other age related factors like physical disabilities, cognitive decline tend to increase over time and contribute more to the social isolation and loneliness. And I think this framework kind of helps us not only appreciate the continuum here, but also that other health related conditions certainly have an impact. So that's a really handy framework to understand, I think, how people, when they present to the clinic seeking your help, where they might fall in the continuum that you see here, might be a good idea to try to assess. And that really, I think underscores why new clinical approaches might be needed.

I think we would agree that by understanding the different stages of social isolation, clinicians can tailor interventions that maybe better address some of the specific needs of the individual who is at risk for experiencing social isolation and loneliness. One thing I wanted to spend a little bit of time here on was we have those three different components in that framework. The first one is within situation disengagement. And I thought it would be helpful to maybe think about what are. How might a patient that's socially disengaged, how might they report that to you in the clinic?

When you're doing a case history, they might say, or their, or their significant other, or their companion at the appointment might share with you that they're zoning out, that there's lapses in attention, their mind is wandering, they're bored, maybe that they're having to expend more listening effort. So those are some of the things that you might, that might show up in the case history. The next part of the continuum is social withdrawal. And I think it's helpful to know what might be reported by somebody that's in this stage of the continuum. How might that be reported to you in the clinic?

And it would be things like leave social gatherings early, avoid certain listening situations, maybe they forego opportunities to socialize and they want to spend more time alone. And then finally, when somebody shows up in your clinic, what does it look like if they're socially isolated, how might they report that to you in the clinic? And it manifests itself maybe as reduced number of social connections.

You find that through your case history, a lack of companionship. Maybe they say that they're housebound or it's reported by their companion that they're house bound and the quality of their relationships with their core network is declining.

So I want to focus on that last bullet point around this concept of core network, because I think one of the opportunities that we have to better assess somebody's risks for being socially disconnected is to look at their different layers of social relations. So here's a nice schematic from the same group of researchers up in Canada to help us better understand the different layers of somebody's social network. And you see here in the middle, the core network is really combined of probably a few number of family and caregivers, then somebody that you might see day in and day out. Then we have in the middle our secondary network, which is comprised of friends and colleagues, maybe people we interact with on a daily or at least weekly basis. And then finally we have our tertiary network, which would be acquaintances, people maybe we run into a couple times a month, a couple of times a year, that kind of thing.

And so the idea here is a healthy aging person really should ideally have a well rounded social network that's represented by people in all three of these layers. Now, I don't think it's a numbers game where we have to say there's X number in each layer. It's more around the quality of the relationship in each one of those. And I think one of the other takeaways, based on some of the research that's done around this layering of social relations and around these networks, is that factors related to aging and hearing loss being among them do cause people to focus more on the core. And I think that reason is pretty obvious.

If you have difficulty hearing people day in and day out, you're going to focus in on familiar voices and the people that are really necessary for you to maintain some semblance of an independent, quality life. Anyway, those are the social, the three different social networks. And I think it's important to better

understand the quality of those three different layers when you're interacting with one of your patients, trying to better ascertain their risk for being socially disconnected. Which brings me to some practical pointers here. As I mentioned before, the traditional test battery falls short of measuring somebody's risk for being socially disconnected.

So I want to just kind of share with you four different tools that I think could be better be a good use of your time that would facilitate asking questions about a patient's social well being. These four tools are going to help you identify the social and emotional impact of hearing loss. And they're certainly going to help you tailor the assessment so that you can target intervention and treatment goals that might align with helping somebody become better connected or to reduce their social disconnectedness. So the first tool, and this comes from Beck Bennett's group, this is nothing more than what I would call a tool that sort of primes the pump. This is just a laminated sheet of paper that you might hand to the patient.

And you see here, there's many emotions and a few maladaptive behaviors listed here on, on the graphic. And the idea is to kind of get the person thinking about how their hearing loss might be affecting their emotions and, and behaviors. And the idea here is you'd have them look at some of it, just review some of these emotions and ask them. And again, this kind of assumes that, that there's a high level of trust between you and the patient. Ask the patient if they've experienced any of the emotions or the conditions that are listed here.

Ask them if they're comfortable sharing how their hearing loss might impact some of the emotions that they share with you. And I think that's a nice way to kind of get the conversation. The conversation started around talking about how negative emotions might, might impact social disconnectedness. So that's a pretty simple tool that I would encourage you to dabble with again, based on your comfort level. Let's go to the second tool.

This one's related to that social network schematic I shared with you. Maybe again on a laminated sheet of paper. Show them these three different levels of networks and ask the patient and their companion to characterize their own social networks. What's the quality? What's the number of people within each one of those core secondary tertiary networks?

That's a great way to kind of start the conversation to facilitate the dialogue by having them talk about the quality and the quantity in each layer, what they might be missing, where they are today with respect to each of those layers, and maybe where they would like to be following treatment, wearing hearing aids. The third tool. This is an old one, been around for about 40 years, recently revised. But this is really the way, in my opinion, in the clinic, to measure auditory and social wellness. This is the Revised Hearing Handicap Inventory, the screening version, only 10 questions.

Remember that five of these questions evaluate the emotional consequences of hearing loss, and five of the questions evaluate the social contact consequences of hearing loss. And I just filled out three of the or four of the ten questions with a yes. I think many of you know how this works. This is one of the more common self inventories that's used in clinical practice. The ones that I, the four that I checked off here are ones that are, I think, directly related to the social wellness of a person.

And I'm just showing that as an example. But remember, Humes and others have come up with an auditory wellness scale. And you see that here on the right hand side. If the score is, you know that for a yes, you get four points. For sometimes you get two points.

For a no, they get zero points. You add that up. And if the auditory wellness score is between 16 and 23, that's poor. If it's 24 to 40, very poor. I find this to be a handy tool because it helps you pinpoint areas where the person might be dealing with some significant emotional or social consequences of hearing loss.

And it helps you determine if an intervention might be in their best interest. And the takeaway is if the auditory wellness score on the screening version of this is 16 or higher, that's a strong indication that an intervention, usually that involves wearing hearing aids would be helpful to the patient to move those auditory or those social and emotional wellness scores back in the. In a positive direction. That's the third tool. The fourth tool is nothing more than the cosi, but a modified version of it.

Again, I Think besides the HHIE family of self reports that are out there, the most popular self report that's used in clinical practice is some version of the cosi, which is great, but I'm going to take the advice of a real expert in this area who is back Bennett in Australia who's crafted a modified version of the Cozy. And you see that here, rather than just asking about listening situations where a person might hear better, I'm going to go back one slide. Remember, the significant needs indicate order of significance. On the left hand side of the cozy is where you would target listening situations that need improvement. While what Beck suggests is that we should go beyond that by asking about situations more than just where they want to hear better, but to explore social activities and associated negative emotions that result from not being able to be involved in those social activities.

So you see here, my hearing loss impacts me. And you see I have two goals targeted more than just listening situation. I paired an emotion with an actual social situation, frustration. It impacts my frustration at the dinner table with family. It's a big problem, it happens daily.

And then you see you have to fill in the blanks with strategies discussed today to address. And then the final column on the top right, my situation has improved one through five. That's where you use this modified COSI as an outcome measure. But you can see here the main idea is you're targeting social activities, not just situations. So those are four tools that I think are really pretty seamless and easy to use in clinical practice that I think are more holistic in nature and help us target social disconnectedness in a better way.

Let's now move to how this, how our knowledge of the relationship between social disconnectedness and hearing loss might shape the way that we select hearing aids and how we can do that to maybe better optimize social engagement. So before I share with you some ways to maybe better promote social engagement engagement through fitting strategies, let's look at some of the existing evidence that talks about how interventions like hearing aids can promote better social engagement. And the evidence in this area is actually fairly mixed. Here's an evidence, here's a systematic review from the UK that found that hearing aid use has a lasting impact on loneliness and social isolation. But their interpretation of the evidence is that it's rather limited.

Here's another study from the UK that showed that social engagement, as measured by the number of hours spent per week in solitary activities like watching tv, that there was no significant difference in that amount of solitary activity after hearing aid use. Another study from the uk this one did show that the intervention group, the people fitted with hearing aids, actually experienced more social engagement relative to the group that did not receive the control group that did not receive hearing aids. And then finally, this is a study from Canada published about 10 years ago that showed that there's a strong social connection that, that, that a strong social connection as measured by something called the DUFS questionnaire. It's a questionnaire of social social engagement that comes from Duke that's used in research. It showed that, that social connections predict hearing aid satisfaction.

And I think my interpretation of that is if you can improve the quality of social connection, maybe you can improve hearing aid satisfaction. So there is some evidence that interventions do promote better social engagement. One very recent example of this comes from the ACHIEVE study from the researchers at Johns Hopkins. I think most are familiar with the primary report that came out a couple of years ago now that indicated that hearing interventions, basically hearing aids, did not reduce cognitive decline in the total cohort. But from that data came two other recent publications.

And the one that I want to focus on is the Sanchez study that looked at use the HHIE over time to see if treatment made a difference with respect to auditory and social wellness. So here is their data. I'll kind of walk you through this quickly. But the blue is the control group, the people that did not get fitted with hearing aids and were followed over three years. And the red is the intervention group, the group that did receive hearing aids and they were followed over time.

And what you see here, I want you to focus on the gray bar and whisker part of the graph at baseline. Notice that both groups were on average were in the mild to moderate auditory wellness scale in the middle around 15 or so. If you look at the gray in the middle of the gray box, that's the baseline, which you would expect in a randomized controlled trial. They're both at the same starting point. And then you see the HHIE was administered in the, the screening version, the one that you can use clinically was administered at the six month, one year, two year and three year mark.

And what you notice here is that in the intervention group we're seeing some significant improvement in overall auditory wellness. And remember, social wellness is about half of that of that score. And we're not seeing any of that change in the control group. And we also notice that year three, both groups tend to go up a little bit. So that shows you that hearing aids do have an impact on social wellness as measured by the hhie.

One of the Interesting takeaways from their data was looking at the percentage of people that scored greater than 10 on the HHIE. So again here you see the red is the intervention group, the people that wore hearing aids that were fitted using a protocol, very systematic, well done protocol. And the blue is the control group. And notice that even for the red intervention group, the people that were wearing hearing aids, about a quarter of the that group was experiencing auditory and perhaps social wellness problems even with hearing aids at six months to two years. So between 22% all the way up to 32% of them were scoring, still scoring highly on the HHI screening version.

So that tells you that hearing aids can fall short for a number of people even when they're fitted with a very rigorous protocol and followed carefully over time. So that kind of leads me to believe, you know, protocols of course maybe help and following people over time. Readministering the HHA IE tells us that, you know, 75% of our patients are going to experience better social engagement or less social disconnectedness this but what about that other third to a quarter that might fall short? So I'm going to share with you here sort of as we wind down three interventions that promote better social engagement and specifically targeting Those people, those 25 to 30 or 33 or so percent of people that still had a significant amount of auditory and social wellness issues on the HHIE at 2 years, 3 years post fitting. So we're going to talk about properly fitted hearing aid technology, empowering the individual and social coaching, some things that kind of go beyond just traditional fitting and follow up with hearing aids.

So of course I'm not here to promote necessarily a specific brand but but I am here to say representing Signia that we have a device in the 7ix that's been engineered to optimize performance in group social situations. We actually have a peer reviewed publication in American Journal of Audiology spearheaded by the researchers up at Western University in Canada that shows a strong consistent prevalence preference in social situations when this multi stream technology is activated. Without getting into the details because we have other webinars at AO that go into a lot of the details here but IX technology is proprietary implementation of a four mic array that uses near failed magnetic E to E technology to create these three acoustic snapshots in the frontal hemisphere of the use of the wear and that's does that's shown and demonstrated by the purple snapshot shots that you see there on the left and those acoustic snapshots detect track and enhance the talkers that even as they move around in the frontal hemisphere of the of the hearing aid wear. And we have data to show that that's a highly effective way and we think that that's a way to promote better social engagement in real world situations. Anyway, that's one sort of cornerstone.

Let's look at a couple of others that I think are really important, especially targeting those that might still suffer from auditory wellness issues.

Well after the fitting one is just the simple idea of empowering the patient to sort of take control of their situation. I'm proud to say that our ORCA lab in Europe, along with some independent researchers over the last five years or so created this empowerment scale called the Brief Empowerment Questionnaire. We have scientific rigor to back this up, but this is a nice five question self assessment tool that allows you to ascertain just how empowered or unempowered an individual might be using five questions I specifically so this could be administered really to any patient. I would encourage you to use this with patients that have maybe had their hearing aids for six months or longer becomes a nice tool to use during follow up. I specifically want to cue you into questions two and three.

Question two I use tactics to help me communicate in challenging situations. And three, my hearing loss doesn't stop me from taking part in social activities. I think those are two specific questions here where you're looking at the empowerment as it relates to social disconnection issues. And of course in my example, if they strongly disagree, that would be a prime opportunity to spend some time trying to empower that person to take better control of how they might be able to master communication and challenging social situations and activities. So the role of the hearing care provider is to provide the skills and knowledge to target those specific areas.

And of course that's beyond just fitting somebody with hearing aids, but giving them the skills and knowledge. Beck Bennett's group does a fantastic job of developing some tools in this area. One of the tools that they and some others have developed over the last few years is something called social coaching. And what I'm showing you is something that they have on their website called activity scheduling where imagine somebody who's lacking empowerment, maybe struggling six months or a year after their hearing aids with social engagement issues. Poor social wellness as measured on the

hhie.

Well, you could do this activity scheduling exercise where you're asking them, sending them home with a little bit of homework, identify social goals for the month, describe how you arrange these activities. So digging a little bit deeper to help that person better understand and better apply some of the things that you teach them so that they can perform at a better level in these kinds of situations. So social coaching I think is something that you might want to target for somebody with poor auditory wellness 6 months or year after the fitting. So you could also think about this framework, the continuum that you see here on the slide. And perhaps, and again, these are things that probably these are more opinions and they're not backed up by any data or research at this point.

But maybe if you identify somebody in your clinic who's in the social dissonance engagement end of the continuum, maybe properly fitted hearing aids is enough. Measure their auditory and social wellness over time and see if a person comes to your clinic and you believe they're more in the middle there under the social withdrawal category, maybe in addition to properly fitted hearing aids, you also conduct some empowerment training, providing them with the skills and knowledge in a very targeted way, using that mpact5 questionnaire to better empower the person to kind of take charge of their situation. And then finally, if you ascertain through your evaluation that somebody is likely to be in the social isolation category, in addition to hearing aids empowerment training, maybe those are the people that you need to spend some time doing the social coaching activity scheduling, take it to the next level. If you're using assistance extenders in your practice, this would be an opportunity for them to get involved in the follow up care in a more targeted, holistic way. So that concludes all of the, all of the information that I wanted to share with you today.

I just wanted to conclude with some final thoughts I wanted to mention to you. There's an outstanding article. Barbara Timmer is the lead author. This was published at International Journal of Audiology

about a year ago and it outlines in much detail a five step plan to optimize social and emotional well being. And I touched on a few of the components of their plan, but they go into a lot more detail.

Another concluding thought that I have for all of you is just to repeat myself for maybe the third time now. But I think it's really important to think about how we can work more holistically if I go back to that, the lived experience of hearing loss. You know, we really, with traditional tests in our, in our toolbox, the audiogram, word recognition, those kinds of things, we're really only looking at a very small part of the lived experience. So I encourage all of you to involve some self repair reports, self assessments, tools like the HHI and the COSI to get a better idea of how we can individualize care to Improve social connectedness and social and auditory well being. And I'm going to steal a phrase that I learned from Beck Bennett in Australia a couple of years ago.

It's sort of a mantra that all of us should share, especially with our, with our, with our patients that are maybe advancing in years. We can't add years to your life, but we can add more life to your years. And I think that's a great way to approach individuals that might be chronologically in their upper 80s, lower 90s, and how we want to squeeze more quality out of their remaining years. And a lot of that is just working on optimizing those social networks and providing some activities, some empowerment coaching to help them do better, to get more quality out of the remaining years that they may have. So that's as much material as I have.

If anybody has any questions, I'll open up the chat box here. Here are my references so you can check my homework and there's my email. If anybody has any reason to contact me, I'll open up the chat. So I see. I'm just going to move right into the questions.

Does the importance of empowerment and social network suggest the importance of rehab training in consumer. I believe that it does support that kind of, that thing. You know, it's easy to talk about rehab and auditory training. I think the challenge historically has always been implementation. Luckily, we live

in a world with smartphones and for some individuals that like their smartphones, they might be able to find a gamified version of auditory training.

But I'm also a big believer in the human connection. Face to face, pencil and paper, things like that, activity scheduling are nice ways to get the patient involved. Anyway, another question. How can we get copies of the Impact? Well, you could email me.

You can also go to Beck Bennett's website. I believe if you go to the article that's cited on that SL, you can find she did a 20Q maybe two years ago, Beck Bennett. And in that 20Q she lists a website where you can download that feelings page, the Impact 5. Just email me and I can send you a copy or I think the citation that I have also has a copy of the short version. There's a longer version, but you wouldn't use that clinical.

All right, I don't think I see any more questions. So if anybody has any more questions, type now or forever hold your peace. Melissa. Okay. All right, Brian, I think we're all set.

I want to say thank you all for joining us again. It was a pleasure having you with us again, Brian, and thank you all for joining us.