

This unedited transcript of a AudiologyOnline webinar is provided in order to facilitate communication accessibility for the viewer and may not be a totally verbatim record of the proceedings. This transcript may contain errors. Copying or distributing this transcript without the express written consent of AudiologyOnline is strictly prohibited. For any questions, please contact customerservice@AudiologyOnline.com.

MarkeTrak 10: Survey Results Reveal
High Satisfaction with Hearing Aids, presented in
partnership with Seminars in Hearing
Recorded Feb 28, 2020

Presenter: Erin Margaret Picou, AuD, PhD
AudiologyOnline.com Course #34300

- [Christy] At this time, it is my pleasure to introduce Dr. Tom Powers and Dr. Erin Picou, who will discuss the MarkeTrak 10 survey results that reveal high satisfaction with hearing aids. This is in partnership with Seminars in Hearing. A little bit about Dr. Picou. She is a research assistant professor in the Department of Hearing and Speech Sciences at Vanderbilt University Medical Center, and is involved with teaching and mentoring AuD students at Vanderbilt. Before we get to Dr. Picou, I wanted to hand the mic over to Dr. Tom Powers to discuss MarkeTrak 10.

- [Tom] Thanks so much, Kristy. Thank you for everybody to participate this afternoon. I just wanted to give a brief overview to MarkeTrak 10. I've been really very fortunate to be involved with MarkeTrak 10, together with my work at Hearing Industries Association, as a part of my new role, in my consulting role since my retirement from Siemens and Sivantos. And so I was asked to be the guest editor by Dr. Catherine Palmer for an edition of Seminars in Hearing. As you heard, we're sort of in conjunction with Seminars Today. And Dr. Picou is one of the six authors that we had on our MarkeTrak 10 edition. And for those of you that get that, I'm sure it just arrived this past week. But for those of you that may not be familiar with MarkeTrak 10, I just wanted to give a brief introduction sort of to the methodology that led to the results. And Dr. Picou is gonna talk about one piece of that. We do have a couple of other webinars that we're trying to get scheduled here related to MarkeTrak 10. So with that, we'll move to the next slide, if we can. And I think we know the disclosures. So MarkeTrak 10 really began way back in 1981 with a survey that was done in conjunction with HIA and Gallup to look into the beliefs, attitudes and actions of hearing-impaired individuals to try and gain some insights into their journey, if you will, into hearing aids. In 1984, the investigation sort of took a turn, if you will, and we really started to look at a really very specific group of individuals with a pen and paper survey of about 3,000 individuals with hearing loss. And that continued up through MarkeTrak 9. With MarkeTrak 9, we moved to an online survey, and we partnered with marketing company A to Z. A to Z is, you know, a superscript out of Minneapolis who became our partner in MarkeTrak surveys. And the online versions of MarkeTrak then took on a

very unique way of profiling and getting folks who had hearing loss, and then getting to owners and non-owners. So the advantages of doing, obviously, online versus paper and pencil are numerous, but for us, it allowed us to do a two-part survey, where we sent a survey out to a whole bunch of individuals. And you can see here, if I can move my little arrow, to about 20,000 folks in the Part 1 screening. And we primarily sent that to the head of household members to try and find out if there was anyone in the household who had hearing loss. And then based on that screening technique, we then ended up with, you'll see here, a little over 3,000, 3,132, to be exact, people who identified themselves as having hearing loss, hearing difficulty, who then obtained Part 2 of the survey, which were then broken down, as you can see here, into both hearing aid owners and hearing aid non-owners. Much higher number of non-owners here. The advantage is, really is, again, we can really dig into both groups and ask very specific questions of hearing aid owners. Obviously, if you're a non-owner, it's difficult for you to respond to things about your journey, since you haven't had one. So with that, that's how we got all of this data. It was then combined and analyzed by A to Z Marketing, and then provided in a massive PowerPoint to our authors. And so today, Erin is gonna talk about the piece that she put together for us in Seminars, and she'll take over from here.

- [Erin] Thank you, , excuse me. Thank you, Dr. Powers. Thank you all for being here. I'm really, really excited to be here and talk to you about the MarkeTrak 10 survey results. I do wanna apologize ahead of time for the quality of my voice. I caught a cold from my son. Fortunately, I don't think you're at risk of catching it 'cause I don't think that's how computer viruses work, but just bear with me, and I apologize if I sound a little stuffy. But as Tom said, I am gonna focus today on the experience of hearing aid users. So the data I'm gonna talk about are specific to people who own hearing aids and who were fitted by professionals, so an audiologist or a hearing instrument specialist. So we're really gonna focus on what the hearing aid owners think about their hearing aids, where they find benefits, what they like, what they don't like. Sometimes we're gonna compare those hearing aid owners to a control group. And that control

group is people who do not own hearing aids, but who report similar levels of hearing difficulty without hearing aids. So they're presumably matched for degree of hearing loss, but minimally matched for the degree of hearing difficulty. And based on these data, so as Dr. Powers mentioned, there's a whole lot of data that came out of the MarkeTrak 10 survey results. And I wanted to pull out a couple of themes. So I wanted to look at the hearing aid satisfaction rates. So today, we're gonna talk about the current rates of hearing aid satisfaction, where hearing aid users, what they're satisfied with and what they aren't, look at what the drivers of satisfaction are. I'm also interested in the benefits of hearing aids. So how do hearing aid owners report their benefits for quality of life, mental health and also communication benefits? But before we get into those benefits and satisfaction, I do wanna take just a few minutes to describe the current status of the hearing aid marketplace 'cause I think it will give us some insight into what people are using, what's popular, but it also provides a nice context for interpreting these benefits and the satisfaction rates. In addition to those three big chunks, so satisfaction, benefits and current trends, through the whole webinar today, I have identified things that I think are going well.

So we're gonna look at the data and identify things that, places where hearing aids are providing benefit, areas where people report satisfaction or maybe look at skills that hearing aid users have mastered. So anytime you see a little heart in my slide, it means that that's an area that I think is a strength for our field and it's a place where things are going well. Wherever things are going well, things might also be going less well. So anytime that you see an exclamation point, these are areas where hearing aid users might be having difficulty, places where we could improve our technology, skills we might be able to teach clinically. These are just areas that I think, as a field, we might wanna pay attention to because they're areas for improvement. Now, one of the things that I would like to do today is have a group discussion, or at least think about and get some insight from you guys into how we might be able to help address these weaknesses in the field. So I do have a polling question at the end where I'm gonna ask for insight and ideas, suggestions for how we might address some of these areas

that we could do better. So in order to not make me feel really awkward on the internet, it would be great if you could be thinking about ideas and ways that we could address these exclamation points, and be ready for that at the end of the presentation. And because polling can get a little bit weird, I know, let's do a warmup polling question. So this is enough for your response. But I am interested in who you are. So if you would, we'll pull up the polling question. And tell me if you're a working audiologist, a student, a hearing instrument specialist or maybe somebody, just a hearing aid user who wants to see how hearing healthcare professionals talk about hearing aids. And so, let's see. So you can see now, I think, the results as they're coming in. So it seems like most of the people who are in our audience today are working audiologists, followed by working hearing instrument specialists, and then we have some students.

So everybody seems to be working in the field, and most of the folks seem like they have experience. It's great to know who you are. Thank you for that. And it also means that you should have lots of ideas. And hopefully, you will contribute some of those at the end of the presentation today. All right, so let's back up a little bit. We all know that hearing loss has consequences. And the primary consequence of permanent sensorineural hearing loss is reduced audibility. So thresholds for soft sounds are elevated, and loudness discomfort levels are not equally elevated, so we have a reduced dynamic range of hearing. As a result, it can be difficult to hear important things, like speech. So we know that one of the number one reasons that people come into our clinic is because they have trouble understanding speech in noise. And that's not surprising, given that hearing loss is related to a loss of audibility. But we also know that difficulties communicating in quiet and in noise can have some secondary consequences. So we've seen evidence in the literature that hearing loss is related to increased depressive symptoms, increased risk of isolation, so not having much social support or not having very many social contacts, and also reduced quality of life. So these secondary consequences are significant in and of themselves. So we don't want our patients to be depressed or be isolated or have a low quality of life. I will also

mention that these secondary consequences in the literature have tertiary consequences. So depression and isolation are also related to increased cardiovascular disease and, ultimately, mortality. So I think that anything we can do earlier on in this chain to improve audibility and improve communication, we can improve the secondary consequences and the tertiary ones, as well. And we do that through hearing aids, is one way to do it. Fortunately, we know that hearing aids can help. So hearing aids make sounds louder. Hearing aids help us understand speech in quiet and in noise. And we know that this applies not just to putting the hearing aid on somebody, but we have features, noise reduction, directional microphones, wireless streaming, that can all help our patients communicate. And, not surprisingly, then, we see scientific evidence that hearing aids can reduce these secondary consequences. We have evidence from laboratory and field studies that hearing aids can reduce the number of depressive symptoms, improve isolation and improve quality of life. So it sounds like things are going well and hearing aids are great, and I think that they are. But we've also seen in the field low adoption rates.

So Lindsey Jorgensen tackled adoption rates and looking at factors that affect hearing aid adoption in the Seminars in Hearing. And I bring it up to say that one of the things that has been related, that people talk about being related to low adoption rates, is low satisfaction with hearing aids. Maybe hearing aids don't help, and if we could make hearing aid benefits bigger, satisfaction rates bigger, then we could have higher adoption rates. So really, what I wanna do today is explore the benefits and the satisfaction rates of existing hearing aid users. So as I mentioned, we're gonna start with, well, we've got these three trends. And I wanna start with the current. I'm sorry, not three trends, three topic areas: trends, benefits and satisfaction. So let's start with the trends. So what are people using and how are they using them? So in the data, we see that most of the hearing aids that were fit. I'm sorry, most of the hearing aids for the survey respondents were relatively new. So most of them were two years old or younger. So that means most of the hearing aids were new, but we also see about 1/4 of the hearing aids were five years old or more. So there's some room for some of our

survey respondents to have upgraded hearing aids, but we're also looking at a large segment of the population who's using new, updated, modern technology. The other thing we found, looking at the survey data, which I think is good news, is that hearing aids don't break very often. So more than 1/2 of the survey respondents reported that they've never had to send their hearing aid in. So this means that the quality of the instruments that we're fitting is high, and that they're stable and durable. And fewer than 1/4 of them had to send their hearing aids in for repair more than two times. So they're stable and durable. Okay, but what are they using? This brings me to another poll question. So based on your experience, what do you think is the most popular hearing aid style? Is it BTE, ITE, CIC or IIC?

Okay, so we're seeing many votes for BTEs, some votes for ITEs or IICs. All right, well, let's find out what the answer is. And it looks like most of you were right. The most popular hearing aid style, by far, are BTEs. So 73% of hearing aids in the MarkeTrak survey were BTEs, and relatively fewer of them were ITEs. So we see these are the pictures that the survey respondents saw. And we can see that the ITE that's a full shell ITE, only 7% of respondents used. CICs and IICs were about 4%. And so BTEs were, by far, the most popular. And within that group of BTEs, the receiver in the canals were the most popular. So 60% of the BTEs were receiver in the canal. So I did see a couple of comments come in that RICs were the most popular. And, indeed, BTEs are the most popular, and RICs are the most popular BTE form. So thinking about other things on the hearing aid. These are a list of hearing aid features. And participants, or survey respondents, indicated whether their hearing aid had that feature or not. And these are internal features, so these are something that's in the hearing aid. Yeah, in the hearing aid. So the most common internal features were volume control. So 67% of people had volume controls, 41% had a program button and about 1/3, less than 1/3, reported directional microphones. So this is the first place where I'm gonna start to apply my own judgment. I think that it's great to see hearing aid owners knowing that they have these features and having them. So many of them have this control, and they also have directional microphones, which give them the

ability to hear better in noise. This is also another opportunity, or an opportunity, for us to look at an area of weakness because I'd like to draw your attention to the not sure column here. So 35% of respondents aren't sure if they have directional microphones. And the reason that I think that that could be problematic is because we know that to make the best use of that technology, patients have to orient themselves. So to get benefit from the directional microphone, they have to be pointing at the speaker and get the noise behind them. And if they don't know that they have that feature, it will be difficult for them to make the most use of that feature. Same thing with the telecoil. So if they're not sure that they have a telecoil, they won't know how to use the telephone with the telecoil. They might not get the position right and they might not know to switch into the telecoil mode if that's something that's part of their fitting. So this is an area, I think, of weakness in the field right now is that a relatively large part of the survey respondents don't know if they have these particular features. So moving now towards external features, so things that, well, are external to the hearing aids. These are less common just overall. And we see that the two most common external features or accessories or apps are hearing aid remote control and a downloadable app for a smartphone.

So these are external ways to control the volume or the program of the hearing aid. Now, if we think and we look at the frequency of use of these accessories, so focusing just on the hearing aid remote control or the downloadable app for smartphone, most of our survey respondents are using those features to control the volume or control the program pretty regularly. Oops, sorry. Pretty regularly. So we don't see a lot. So the dark bars up at the top are that they've used the app or the remote control daily or weekly. And as we go lower on the graph and the colors get lighter, that means that they don't use the app or the remote control very often. I put a little bitty exclamation point here because 11% of people who have a remote control haven't used it yet. So they've invested in the technology, somebody fit them with it and they own it, but they've just never used it yet. So it's not clear if they haven't used it because they don't need it or they don't know how to use it, but it is a relatively big chunk for having the

technology. All right, so what about wireless connectivity with smartphones? And this is becoming more popular and there's more and more hearing aid companies are connecting wirelessly. So let's look at these wireless capabilities. So the good news is that most adults have cellphones. So this is looking at cellphone market penetration rate as a function of age in that left column, so have a cellphone. And then the right panel is have, the cellphone is a smartphone. So we see that almost everybody has a cellphone, and we don't see a decline in cellphone market penetration rate until we get to users who are older than 85. Similar pattern here for, that their cellphone is a smartphone. So for most people, the vast majority of people, the cellphone that they have is a smartphone, and that declines only for people who are older than 75. So this means that there's plenty of opportunity for hearing aids to connect to a smartphone, either through streaming or program controls or that sort of thing because they do have the equipment necessary to connect.

So I think this is a strength not so much in the hearing aid industry, but it's an opportunity for us to connect to and make use of those smartphones. As the smartphone technology landscape changes, so, too, can the hearing aid marketplace. Well, what about wireless connectivity? This is the percentage of people who said that their hearing aids had these wireless capabilities, so the ability to link to volume or program changes, so if one hearing aid changes, the other one changes. The ability to stream sound from a TV or cellphone, or the ability to stream from an iPhone directly to a hearing aid. So most commonly, the wireless connectivity feature that people had was the ability to link the settings in the two hearing aids. And the other, wireless streamings, were less popular. But I think that we will see this become more popular, and already in the MarkeTrak 10 survey data, which were collected last year, 54% of people had some wireless connectivity. This is an area that I thought maybe we could work on. Again, we're seeing that people don't know if they have it. A patient should know if they have the ability to stream or not stream. And so I think that might be a counseling piece there or an area for improvement. So I talked a little bit about smartphones, but one question is what are people doing with their iPhones? And

mostly, people are doing lots of different things. So they're adjusting hearing volume, they are streaming audio or music, they are changing the volume control, they're changing programs. Some of them are even geotagging the physical location where they are or saving a spot, so that's, in my mind, pretty tech-savvy, complex interaction with a cellphone, or a smartphone. But, again, 25% of people haven't used their connectivity yet. So they have it, they have a hearing aid that's capable of doing it, they have a smartphone, they have all the pieces in place, but they're not taking full advantage of the wireless connectivity. So those are the key points that I wanted to pull out about the current trends and what people are using and what they have. But now let's turn to the second part, the second area, which is satisfaction. So how satisfied are people with their hearing aids, and what are they satisfied with, which parts are they satisfied with and what's driving that satisfaction? So I do wanna mention that some of the data that we're looking at, the MarkeTrak data are grouped, in a number of cases, looking at satisfaction for the top three boxes.

So survey respondents would rate their satisfaction using a scale of one to seven, where one means that they're very dissatisfied, seven means that they're very satisfied, and four is neutral. So most of the slides I'm gonna show you are color coded in this way, where red is not satisfied, and green is very satisfied, yellow is neutral. And sometimes I'm gonna talk about top three boxes or bottom three box scores. And so the top three box scores is all three of those green boxes combined, and the bottom three box scores, all three of those red boxes combined. So this, I think, is another nice opportunity for a poll question. So how many people do you think are satisfied with their hearing aids? Is it two outta 10, five outta 10, eight outta 10 or 10 outta 10? And let's let those numbers come in for just a second. Okay, great. It looks like most people think eight outta 10 users are satisfied, but we do see some spread. So some folks think that only five outta 10 are satisfied. So let's take a look at the data. Well, congratulations. If this was trivia night, many of you would have won those points. So what I'm showing you here is that more than eight outta 10 hearing aid users are satisfied. So the MarkeTrak 10 survey data are in red. And similar surveys in other

geographic locations are in gray. So we can see that sort of internationally, eight outta 10 people being satisfied is consistent across the board. And then we're also looking at our two different years of satisfaction data. So the hash lines are 2015, and the solid bar is 2018. So we can see that it's relatively stable. We might see a slight uptick, but we do see pretty much eight outta 10 hearing aid users are satisfied. So I'm just gonna put a heart there because I think eight out of 10 is really great. That's a pretty big, high percentage of people who are satisfied. So when we look to the literature, and we're looking at scientific evidence, what factors are related to hearing aid satisfaction, there are some that come out. So we have seen, in the literature, that people who have more perceived hearing difficulty are more likely to report hearing aid satisfaction. We know that initial attitude towards hearing aids is related to hearing aid satisfaction. Also hearing loss self-management.

So self-management is the knowledge and skills that people use to manage the effects of hearing loss on their everyday life. So people who are better at that report more hearing aid satisfaction. And then also, we've seen some evidence that people who have more social support are more likely to be satisfied. This is a list of factors that, in the literature, we haven't been able to relate to hearing aid satisfaction. So pure tone average is a pretty big one. You might think that somebody who has more hearing loss would be more satisfied, and it turns out it's not the audiogram that's related to satisfaction, but the hearing difficulties. Also, we don't see relationships between age, gender or employment status and satisfaction. But all of these factors that I've mentioned that either are or are not related to hearing aid satisfaction aren't really device specific. So one of the really cool things about the MarkeTrak 10 survey data is we can look at hearing aid fitting factors that are related to satisfaction. So I'm just gonna summarize what I'm gonna tell you, and I'll show you the data that supports this in a minute. But the MarkeTrak 10 hearing aid factors that are related to satisfaction are hearing aid age, hearing aid cost, hearing aid style and hearing aid features. So let's just go through those in order. So this is hearing aid age. So people who have newer hearing aids are more satisfied. And I'm showing you the, as I promised, the

satisfaction scores for hearing aids that are less than one year at the top, that are more than six years old and then past owners. So we see that even people who used to have hearing aids and don't use them anymore are satisfied with their hearing aid. So hearing aid satisfaction isn't a strong factor in that hearing aid, my hearing aid is in the drawer piece. So that's one thing I wanted to mention. And the other one is that people whose hearing aids are newer are more satisfied. So we see more people with six-plus-year-old hearing aids have more red in that figure. Hearing aid price or cost is also something related to hearing aid satisfaction in that people who spent more than \$3,000 were more likely to be satisfied. So 85% of people who are in that top three box were satisfied with their hearing aids. Whereas, that number is lower if they spent 1,500 to 2,000 or less than \$1,500. So paying more is related to higher hearing aid satisfaction. Hearing aid style. People who have BTEs are more satisfied.

So this figure is showing percent of respondents who are satisfied for hearing aids that are in the canal, so those red bars on the left, relative to the behind the ear, which are the gray bars. And some of this is related, you might think, to level of technology. If we look only at the highest level of technology, the satisfaction rates for the ITEs are 79%, so they're still not quite as high as the BTEs. So people who have BTEs are more satisfied. This one, I think, is really cool. So this is hearing aid features that are related to satisfaction. So these are people who reported that their hearing aids had each of these features, so directional microphones, telecoil, apps, Bluetooth device, rechargeable batteries, et cetera. You can read those there. And this is satisfaction on that one to seven scale for people who report that their hearing aid has that feature, in the pink, or hearing aid does not have that feature, in the gray. And we see that for a lotta those features, people who have that feature are more satisfied than people who don't. So we can study satisfaction and hearing aid benefit in the laboratory and in the field, and sometimes those results aren't super encouraging. And sometimes we get to look at the perspective from the hearing aid owners themselves, and we see that those features are making a difference. They're more satisfied with their hearing aids. But it doesn't apply to all features. So just having features isn't enough. The big ones are, so

these are rank ordered by difference in satisfaction rates. So directional microphones make the biggest difference. And then I've drawn a green box around all of those that having that feature makes a difference in hearing aid satisfaction. So directional microphones, telecoils, apps, rechargeable batteries, tinnitus masker. This is a list there for you. So I've already said that, rechargeable batteries, tinnitus masker and wireless hearing aid, so a hearing aid capable of wireless connectivity. So these are all features that are working and they're helping people, presumably, because they're more satisfied with their hearing aids. The three that I thought were interesting that are not related to hearing aid satisfaction are a remote control, the companion microphone and a TV streamer. So one of the limitations in the MarkeTrak survey data is we don't get to go in and dig a little bit deeper with the people who have these features. So it's not clear if they don't know how to use the companion microphone or the TV streamer, or maybe they fall into that category where they're not using their remote control. It's not clear why these features aren't affecting satisfaction, when you would expect that they would. The companion microphone can significantly improve the signal-to-noise ratio. For a spouse, the TV streamer gives them direct access to television with their individual programmed gain.

So this is an area I think, as a field, we could be thinking about why these things aren't affecting hearing aid satisfaction. So this next figure is showing the MarkeTrak 10, and the HIA did some factor analysis looking at factors that drive hearing aid satisfaction. And so I've got rank ordered here the things, the factors that are driving hearing aid satisfaction based on the survey responses. So the top two are that the hearing aid performance or sound is a big, important player in hearing aid satisfaction. So people are more satisfied when they can tell where sounds are coming from, when the hearing aids sound natural, when the hearing aids sound rich, and when they cut out background noise or they sound clear. People are also more satisfied when they go to a professional, when the practice is organized and efficient, when they feel like they have quality counseling throughout. So two things that we have very direct control over are driving hearing aid satisfaction: the quality of the sounds and the instrument, and

how well we provide those services. These other three factors play a smaller role. So is the hearing aid nice looking? Is it small? Is it invisible in my ear? Is it easy to clean? Is it easy to change the batteries? And then the bottom of that, the smallest contributor to hearing aid satisfaction, is cost, in both upfront and ongoing. So how much did it cost me and what's the value for that hearing aid? These bottom three are also things we can control. We can pick smaller hearing aids and we can pick things that are easier to clean and care for. So it's nice to see and feel like we have a direct, we can have a direct influence on satisfaction.

So this is related to that factor analysis, but this is a cluster analysis for people who said that the hearing aid was better than expected. So why are people more satisfied with their hearing aids? How did it exceed their expectations? And a lot of that is reflected in the slide I just showed you, but it's really about hearing well. So they feel like their hearing aid helps them converse better, they can hear new sounds, they can hear the TV, they can talk on the telephone, the quality of that sound is clear, it helps them get rid of the background noise. And all the way down at the bottom there, the smallest contributor is that it was a reasonable price. The flip side of that is in what cases or what causes a hearing aid user to be unsatisfied? How does the hearing aid perform worse than expected? And again, it's sound issue. So either the quality of the sound or they've got feedback, they can hear too much background noise or they just don't understand well enough. So they're not hearing well enough or they feel like the hearing aid doesn't help them very much. Physical product issue, so it's uncomfortable, cumbersome, it's ugly, it falls out is the third highest in that list. And again, we see price falling sort of near the bottom. So let's dive in a little bit now to the individual factors that people are satisfied with. So this is looking at a range, key attributes of the hearing aids. And they're ranked order here, so we can see things that people are most satisfied with and things that people are not as satisfied with. So I've got a heart at the top because these are areas where things are going well. We see very few people who are dissatisfied with the quality of their hearing aid or how easy it is to use their hearing aid. Most people are satisfied with the appearance of their

hearing aid and the sound quality. And if we go down to the bottom, we see more people are dissatisfied with the out-of-pocket price that they paid, so they do feel that their hearing aid is more expensive, but note that the value of the hearing aid is a little bit better. So they feel like there's some value in the hearing aid, but they're not happy about the cost. And I will say that these satisfaction rates for out-of-pocket price paid aren't that different from satisfaction rates of other durable goods, so the cost of other durable goods. So cars, appliances. These are things that are expensive. People don't really like to pay a lot of money for them. And so the satisfaction with those costs isn't great. So looking at the physical and sound attributes of the hearing aids, again, this is rank ordered. So people are most satisfied with how reliable their hearing aids are, how durable it is. So that's consistent with the idea that most of those hearing aids never go in for repair. They like the clarity and tone of the sound. And when we get down to the bottom there, we see that few people are satisfied with how comfortable it is to listen in loud sounds and how rich or faithful the sound is. And then this is level of satisfaction with functional aspects of the hearing aid.

So again, same idea, but they're most satisfied with the ease of insertion or removal of the hearing aids, how easy it is to change the battery, how easy it is to clean it. And they're least satisfied with, well, the bottom one there is, sorry, it's cut off a little bit, but it's the ability to mask or reduce the negative effects of tinnitus. So this question is a little, doesn't apply to everybody because not everybody had a tinnitus masker, and so the data are a little skewed there. But if we look at the next one up, the ability to minimize background noise. So people aren't satisfied with how much the hearing aid is or is not getting rid of the background noise, so another area for improvement. So just to summarize those factors leading into hearing aid satisfaction, eight out of 10 users are satisfied, which is great. They're more likely to be satisfied if they had newer hearing aids, hearing aids that cost more than \$3,000, they had BTEs and they had features, except not remote, microphones or TV streamers. And the drivers of the hearing aid satisfaction really seem to be the sound quality and the care that they get from the hearing care professional. Just to summarize, people are satisfied with the

product quality, how easy it is to use, generally how the hearing aids look, how durable, how reliable that they are and how easy they are to use. Then in rooms for improvement include the effectiveness of advanced features, the cost and the ability to minimize background noise and comfort in loud sounds. So we have now tackled the current market trends and satisfaction rates. So the third big picture topic that I'm gonna talk about are hearing aid benefits. And I've broken this down into two different, two smaller categories: benefits for communication and benefits for mental health. So let's start with communication benefits. So where are people noticing that the hearing aids help them communicate? So this table, hopefully you will have it in your handout. I'm not gonna read it all. But this table is showing the percent of respondents who are satisfied with communication in one of these situations. And it's broken down into all hearing aid owners, people who have had their hearing aids for less than one year, people who have had their hearing aids for more than five or more than six. And then, I mentioned that I was gonna compare data sometimes to a control group of hearing aid non-owners.

So that's that gray column on the far right. So those are people who don't have hearing aids, but have similar degree of unaided hearing difficulty as our hearing aid owners. And this figure, this table, is rank ordered. So the communication situations at the top are where more people are satisfied with their ability to communicate in those situations. And the ones at the bottom are where fewer people are satisfied with their ability to communicate in those situations. So if we look the the top, those are places where things are going well. So in conversations with one person, at home with family members, in the workplace, in small group conversations. Nearly eight outta 10 people, if we just look at the all owners, nearly eight outta 10 people are satisfied with the way that they are able to communicate in those situations. Conversely, if we look over at the non-owners, about 1/2 or less than 1/2 of people who have similar communication, or hearing difficulties, are satisfied. And then if we go to the bottom, places where people aren't satisfied with their ability to communicate. It's talking on the telephone, trying to follow a conversation in noise and in a classroom. But as I sort of alluded to,

we could use this data to think about hearing aid benefits. So eight out of 10 people are satisfied if they have a hearing aid, and only 1/2 are satisfied if they don't have a hearing aid. That means the hearing aid's doing something. So I have restructured this table to look at the difference between hearing aid owners and hearing aid not owners, and calculate the difference between the owners and the non-owners and looked at the places where the hearing aids are having the biggest effect. So it's now rank ordered, but it looks like the hearing aid has the biggest effect when trying to follow conversations in noise. So even though only 68% of people are satisfied with their ability to follow conversation in noise, which isn't great, it's a lot better than the 27% of non-owners. So even though we classically think of hearing aids as not working in noise, I think this is evidence that the hearing aids are helping people communicate in noise. So the biggest differences here are in noise, with large groups and when watching TV with others. And if we go down to the bottom, then, we see places where the differences are smaller: when talking on a cellphone, when listening to music or talking on a traditional phone.

So these are places where the hearing aids are affecting satisfaction rates less, and so these are areas for improvement. And one of the questions that I had when I looked at these data was what is it about the phone? So how are those communication situations on the telephone, and what are they doing? So this figure is showing the percent of people who use their hearing aids when placing or receiving phone calls. We see that most people are using their hearing aids. So again, we're focused just on the hearing aid users. So they are using their hearing aids to talk on the telephone mostly. And then this figure is showing the kinds of difficulties that people report when they are trying to talk on the telephone. So the left panel is that they run into interfering noise, and these other two are that the other person's speech is not loud enough or not clear enough. And lighter bars mean that people regularly have trouble in that situation, and the darker bars mean that it never happens to them or it's only rare. So it looks like the buzzing, interfering noises, et cetera, is relatively rare. But here, we see that there's a pretty big percent of the survey respondents who are having trouble either regularly, or

at least occasionally, because the level of the other person's voice isn't loud enough. So I think this is another thing that we could do clinically, another area of concern that we can address, is how to help people hear on the telephone. And hopefully shift these scores so that people are having less and less, fewer and fewer problems on the telephone. The MarkeTrak 10 survey asked explicitly about changes that people can attribute to the hearing aids. And we see that most people said that they notice a difference in their ability to communicate effectively, and willingness to talk and engage in conversation. So these hearing aids are helping people engage and talk and communicate. On the bottom, we see that they don't report that hearing aids affect their sense of humor or physical health, which isn't surprising, so I didn't give it an exclamation point because there's nothing, no technology is gonna make, at least, change my sense of humor, so I'm not surprised that they don't report that the hearing aid is helping them there. Good news is that hearing aids aren't generally embarrassing.

So this question was different for owners and non-owners, but they asked the non-owners if a hearing loss made them feel embarrassed. I'm sorry, made them feel rejected or made fun of. And the hearing aid owners, they asked if the hearing aid made them feel rejected or embarrassed. So most of the hearing aid owners said, "No, the hearing aid doesn't make me feel rejected or made fun of." Similarly, it doesn't make them feel embarrassed. So the hearing aids aren't embarrassing, it's not causing, generally, causing feelings of embarrassment. So just to summarize this communication benefits, most people who wear hearing aids don't report that they feel embarrassed, compared to their peers without hearing aids. More hearing aid users are satisfied following a conversation in noise or in groups. And they report that hearing aids help them communicate, engage in conversations and help at work. So let's turn now to the mental health benefits. For the non-owners who have that similar degree of hearing loss, 32% of them are at risk for depression based on the depression screener that the MarkeTrak 10 survey asked. But that number is much, much smaller for hearing aid owners. So that number's only 11%. So we see a pretty big difference. And

this, to me, suggests that hearing aid use lowers the risk of depression. So given similar communication difficulties, hearing aids significantly changes the risk for depression. Hearing aids also improve quality of life. So this is showing the percent of respondents who said that the hearing aids regularly, occasionally, rarely or never improve their quality of life. And I'm also showing MarkeTrak 9 survey data and MarkeTrak 10. So it's relatively stable. We see a little bit more people this time saying that their hearing aids are regularly improving their quality of life, so I put lots of hearts there 'cause that sounds great. And this isn't really my story to tell, but I do wanna pull out one piece of the PSAP data that Brent Edwards handled looking at the responses to that question. So how often do the hearing instruments improve your quality of life? And what I'm showing you are hearing aid owners on the left, so lots of green. So either regularly or occasionally, the hearing aid is improving their quality of life. And on the right, I'm showing you the data from the people who own PSAPs, or an over-the-counter hearing aid-like device. In general, if we consider regularly and occasionally together, we see that the improvements in quality of life are similar. But if we break that down between regularly improving quality of life and only doing so occasionally, we see that the hearing aids are winning.

So more hearing aid users report that the hearing aids are regularly improving their quality of life. It's 55% for the hearing aid users, and it's only 40% for the PSAP users. So if you're interested in these sorts of ideas, I encourage you to read Brent Edwards' article and tune into his webinar. Okay, so just to summarize, then, the mental health benefits. We see that the risk of depression is lower for people who have hearing aids than who don't, and we see most people, more than 80%, report that their hearing aids are regularly or occasionally improving the quality of life. And the regular improvement of quality of life is better for hearing aids, for people who were fit by professionals relative to people who got their hearing aids with a different service delivery model and that aren't quite hearing aids yet. So I promised you that we would talk about things that were going well, and things that maybe weren't going so well. So I just wanna summarize the things that I think are going well. So satisfaction rates are relatively

high, so more than 80%, and relatively stable. The satisfaction rates are being driven by sound quality and effective professionals. So we have good technologies and we're doing good services, we're providing good services to our patients. Hearing aid satisfaction is also driven by the age of the hearing aid, the price and the features. So this is direct evidence that these features are helping because they're improving hearing aid satisfaction. We also see direct evidence that hearing aids are reducing the risk of depression, improving the quality of life and enhancing communication in important listening situations. Also, as a positive note that I skimmed through pretty quickly, the feelings of hearing aid stigma are rare. So most people didn't report feeling like their hearing aids were embarrassing or they were feeling rejected as a result of hearing aid use. In fact, not using hearing aids and having difficulty communicating in those situations is a lot more embarrassing and causes people to feel left out or made fun of or rejected more so than having the hearing aids. So I promised you that I was gonna ask you what we could do to address some of these areas of weakness that I identified.

And so we do have another polling question. And the others were multiple choice, but this is now a for your response. So I hope that you will take a moment and type in your answers and tell me some things that you see that you think that we could do as a field, either clinically or at the manufacturer level, to address these weaknesses, potential weaknesses, that I've identified. And I think your answers are anonymous. Great, consistent verification is one thing, so that would. Yup, ensure that hearing aids are being fit to a prescriptive target and we know what we're doing. So quality versus quantity. Always include a discussion of communication strategies in the hearing aid fitting. Spend more time with the patients with counseling. Validate the outcomes. Hm. Expectation settings, yeah. These are some really great ideas. Follow up with patients. Communication strategies. Thank you all for not leaving me hanging out in the internet by myself with no online discussion. Build hearing aids that maintain performance and sound quality. That's a great idea. Routine follow-up sessions. I'm seeing. Improvement with speech and noise with hearing aids on versus hearing aids on. Verify

and adjust telephone programs. It disappeared, but I saw a comment, or a suggestion, that said, "Remember that patients "don't remember everything we told them "when they leave the office," which is great. So that's related to counseling and follow-up care. Engage family members whenever possible. Mm, provide literature other than hearing aid pamphlets. I think you all read ahead. Did you read ahead? These are some really great ideas. They're better than. Some of them I came up with and some of them I haven't, so I'm really glad that I asked. I see one here in the Q and A. It says, "Maybe on the next MarkeTrak survey, "add a measure of the level of automaticity "as related to satisfaction." That's a really interesting idea. Okay. Thank you, everybody who contributed to this poll. These are really, really great ideas. Some of them are better than the ones that I come up with.

So let me move through the ones that I brainstormed. Okay, so this is one thing, and it came up in this poll question, but many patients are unaware of their features. So this is related to counseling, and somebody mentioned the brochures. And we've seen in the literature, evidence that many of the hearing aid manufacturer brochures are not written at a level that is appropriate for our hearing aid patients. So if the brochures had better, more simple language and more pictures, there's some evidence that patients can get more information out of them and do better. And also, and it came up in those poll questions, also, counseling. So, you know what, to address some of these issues, we don't need to counsel more all of the time in all of the appointments, but we could take really targeted counseling for the individualized patient based on what their needs are and what their hearing aid is. So one thing, also, was that these external accessories were not yet related to satisfaction, so the companion microphone, the television streamer. We might see that this naturally changes as our patients become, as our current generations of tech-savvy people become older and as the technology develops itself. I think there have been a lot of manufacturer developments since the MarkeTrak 10 survey went out, so this might just change naturally. It might also be that we need to be thinking about, talking about how to best set the gain for streamed programs. Especially with an open-fit hearing aid, much of that streaming signal is

gonna leak out and the background noise is gonna leak in, so we might need to make sure that we're providing the right gain settings for a streamed program, which might be different than a regular program. Satisfaction with cost is pretty low. So this is a call to provide cost-effective services and hearing aid options. I was a little surprised that satisfaction with listening to loud sounds was so low. So this is something we could do by setting, verifying and validating the MPO, or the maximum output, of the hearing aid. Satisfaction with background noise was also low, so I was thinking about feature-specific training. So making sure that the patients know to point their nose towards who they're listening to, if they have directional microphones, for example. There might be a way, and we're working on it in the laboratory, of figuring out who's most likely to benefit from these technologies. So it might be that we need to individualize these features. And some of this isn't anything we can do anything about, so we're putting out a call to the manufacturers to provide technological innovation so we have high-quality instruments to fit. Somebody mentioned this in the poll question, also. So the satisfaction rates on the telephone are relatively low, and people are sometimes having trouble understanding the clarity, because of the clarity and the loudness of the other talker's voice.

So this might be making sure that the telephone programs have adequate gain, making sure that they're trained 'cause those telecoils do require patient-specific training. And then thinking about individualized patients, what kind of streaming is best for the telephone. Is it a telecoil? Is it a Bluetooth? Is it something else? So I think that the telephone is an area that we could be thinking more about. So those are the ideas I had, and you saw ideas from your other colleagues out there, as well, who are tuning into the webinar. And let me just summarize by saying that we have, so what I've done today is review the MarkeTrak 10 survey results looking at satisfaction, benefits. And we saw eight outta 10 people are satisfied. So this is great. Things are going well. We're working together to provide effective services with good, high-quality hearing devices. People note satisfaction and benefit across a wide variety of domains. So things are going well for most people. There are a couple areas here where we could

improve the services we provide and the technology that we offer. And I just reviewed and we talked about already a lot some things that we could do, most of that centering around counseling and providing individualized services for patients to try to address really specific listening situations where they seem to struggle. But overall, I think collectively, we're doing a great job helping people who decide to adopt hearing aids. And I think that we should keep up the good work. So with that, I will take any questions. I do see a question. "How have satisfaction rates changed over time?" "So it's still low and about the same." Satisfaction rates have been generally stable. Well, at least in the 2015 data that I saw. It was 81%, and we're up to 83% now. So it's pretty high, I think, and increased a little bit over the last three years. Let's see, this question is long. I can't see it all. So Janelle says, "In response to the person "who mentioned 50% repair rate seems unreliable, "I think it's so important to counsel the patient "that hearing aids always need routine maintenance, "like getting an oil change in your car, "and that receiver replacements are not uncommon. "I would guess most of those repairs "are wax-related." Yeah, so the thing about how many hearing aid needs to be sent, how many hearing aids need to be repaired, that's sent into the manufacturer. So a receiver replacement in the clinic wouldn't have fallen in that, wouldn't have gotten a yes. but it's a good point that durable goods, cars, electronics, appliances, need maintenance. Hearing aids, too. And a question here. "I missed what percentage of people "who are not using them." I don't know. I just focused on the people who are using them. Lindsey Jorgensen is gonna have a webinar, if she hasn't already, about hearing aid adoption rates, and it is in that Seminars in Hearing MarkeTrak special issue. All right, that looks like it was the last question.

- [Tom] So I think this is a, this is Tom Powers. I think I'm gonna just jump in quick. Thank you, Dr. Picou. That was really great and a great summary. I'd like to thank, certainly, AudiologyOnline. From HIA, also, thank everybody for attending. We are going to have a couple of additional pieces of MarkeTrak 10. Dr. Robert Fifer has a webinar on the reimbursement portion of MarkeTrak 10 in Seminars. We have a couple of others. As you just heard, Dr. Lindsey Jorgensen will also be getting scheduled, as

well as Dr. Brent Edwards. We also have a course at AAA, at the convention in New Orleans. And also, an upcoming 20Q that's related to that. And I'll leave it at that 'cause I don't wanna release any information about what that's about, but it is gonna be related to MarkeTrak 10. So again, thank everybody for coming. Thank you, Dr. Picou. Thanks to AO. And I'm not sure if there's anything else, Kristy, that you need to wrap up, but other than that, again, thanks and everybody have a great weekend.

- [Christy] Thank you, everyone. Have a great day.