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THE COUNSELING ADVANTAGES OF RECHARGEABLE HEARING AID BATTERIES

by

BELINDA M. SUN

A capstone research project submitted to the Graduate Faculty in Audiology in partial fulfillment of the requirements for the degree of Doctor of Audiology, The City University of New York

2019

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by

Belinda M. Sun

This manuscript has been read and accepted for the Graduate Faculty in Audiology in satisfaction of the capstone requirement for the degree of Doctor of Audiology, Au.D.

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ABSTRACT

The Counseling Advantages of Rechargeable Hearing Aid Batteries

by

Belinda M. Sun

Advisor: Barbara E. Weinstein, Ph.D.

Rechargeable battery hearing aids offer the user many benefits over disposable battery hearing aids. They are easier and more convenient to handle, are environmentally friendly, and offer peace of mind as the charge is not expected to run out during the day. Another potential benefit of rechargeable battery hearing aids is that because rechargeable battery hearing aids are simpler to manage than disposable hearing aid batteries, the time taken to counsel and teach patients about battery handling and maintenance with rechargeable batteries is expected to be less than the time needed for orientation with disposable batteries. The purpose of this study was to determine whether there was a difference in the amount of time spent during a hearing aid orientation for disposable batteries compared to rechargeable batteries as well as to see patient preference for battery type and what features are important to a patient when choosing battery type.

Participants were screened for visual acuity and cognitive status prior to beginning the study. Those who passed the screeners were given a hearing aid orientation for both rechargeable hearing aid batteries and disposable batteries. At the end of each session, teachback was employed to ensure the patients understood and recalled the information presented. The

orientations including the teachback were timed. At the end of both orientations, participants filled out a survey of preferences.

Results indicate the rechargeable battery orientation took a shorter amount of time than the disposable battery orientation. While participants indicated both the disposable and rechargeable batteries were easy to handle, participants preferred the rechargeable battery over the disposable battery, citing convenience and ease of use as their main reasons for their preference. Features participants considered important when choosing battery type included convenience, environmental friendliness, and not having to worry about replacing batteries when using hearing aids during the day, all features found with rechargeable technology. These findings indicate rechargeable battery hearing aids should be offered as an option to all patients looking to adopt hearing aids.

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Introduction

Hearing aid self-efficacy, or an individual's confidence in their ability to use and maintain a hearing aid is an important factor that influences older adults' decisions to obtain hearing aids and achieve successful outcomes with them (Meyer et al 2014, Smith & West 2006). Erber et al (2003) examined the influence of non-auditory factors (e.g. vision, manual dexterity) on use of hearing aids. Visual and physical impairments may negatively affect the handling/maintenance of hearing aids. Meyer et al (2014) found that individuals with visual dysfunction were significantly less likely to report an adequate level of self-efficacy for basic handling of hearing aids. Hearing aid management requires tasks that involve manipulation of small objects such as battery insertion and removal, which can be difficult for an individual with a visual dysfunction or dexterity issues. A review by McCormack and Fortnum (2013) examined reasons why patients fitted with hearing aids do not wear them. One of the reasons found in studies was that patients need help changing the batteries (Cohen-Mansfield & Taylor, 2004; Tomita et al, 2001; Vuorialho et al, 2006). Erber et al (2003) recommended changes to the design of hearing aids to maximize ease of use for patients, including recommending rechargeable hearing aids.

Results of the MarkeTrak IX survey indicated rechargeable hearing aids/batteries as important features consumers are interested in when looking to purchase hearing aids. Rechargeable hearing aid batteries offer many benefits to the patient. A study by Crowhen (2018) found that managing rechargeable hearing aids is significantly easier and faster to handle than disposable hearing aid batteries for those with normal and those with simulated reduced dexterity. Participants inserted and removed disposable batteries from a hearing aid and inserted

and removed rechargeable battery hearing aids from a charger in both a normal dexterity condition and a simulated reduced dexterity condition using gloves. Results revealed that the amount of time taken to insert the disposable battery was longer for both the normal and reduced dexterity condition compared to time taken when inserting and removing a rechargeable hearing aid from the charger. Parents also indicated inserting and removing the rechargeable battery hearing aid from the charger was significantly easier than insertion and removal of the disposable battery. The shape of disposable hearing aid batteries (small and round) makes them difficult to manipulate and if dropped, they can roll away. Rechargeable battery hearing aids do not require manipulation of the batteries, only of the hearing aids themselves, (except as a back-up, as some rechargeable hearing aid units allow the rechargeable battery to be interchangeable with a disposable battery).

Other than greater convenience and ease of use, rechargeable technology offers a number of other advantages over disposable batteries (Heuermann, H., & Herbig, 2016). One of the benefits of rechargeable battery hearing aids is the convenience of not needing to remember to purchase batteries or replace them every week. They offer peace of mind as the charge on a fully charged rechargeable battery is now expected to last all day and not run out of power while you are using them during the day. Rechargeable batteries are more environmentally friendly. A binaural rechargeable hearing aid user only needs to replace two batteries once a year. Meanwhile, over the course of a year, a binaural disposable battery hearing aid user typically uses more than 100 batteries a year. Not every hearing aid user or audiology office recycles their old batteries. It is estimated that 1.4 billion disposable hearing aid batteries are dumped in landfills every year (Dueber, 2014). Even if a rechargeable battery hearing aid user does not

recycle their battery, the amount of batteries going into the landfill from that user is only two a year.

Many different types of batteries exist, each with their own advantages and disadvantages. The most common type of disposable battery used for hearing aids is zinc-air. Zinc-air batteries are activated by removing the sealing tab and allowing the battery pill to be exposed to oxygen. This exposure initiates a chemical reaction. Advantages of zinc-air include a relatively high energy density, constant voltage rate over a long period of time, low self-discharge rate under sealed conditions, long-lasting life under low-power conditions, and inexpensive material composition. However, once the seal is removed, the battery begins draining relatively quickly and zinc-air is not a rechargeable technology.

Three different types of rechargeable battery technology are currently commercially available for use with hearing aids: Nickel metal hydride, Lithium-ion, and Silver-zinc. Nickel metal hydride (NiMH) cells have similar energy density and voltage rate as zinc-air, and can even be interchanged within the same device. However, they have a relatively high self-discharge rate, can be overcharged easily, and ultra-low discharge or pole-reversal can damage the cell. Lithium-ion is another type of rechargeable cell. Lithium-ion based batteries have very high energy densities and efficiencies, a longer battery life, a fast charging mode without memory effects, a long lifecycle, and a low self-discharge rate. Lithium-ion cells can be kept inside a hearing aid for its entire lifetime. While this has its advantages such as theoretically never having to replace the battery, this means the battery cannot be exchanged for a disposable battery in case the hearing aid loses its charge while in use. Also, if the user needs to replace the battery or ship out the hearing aid for repair, the sender must comply with federal regulations required for shipping lithium-ion products. Other disadvantages of lithium-ion include the

tendency to overheat under stress conditions. Silver-zinc is currently one of the most common types of rechargeable batteries used by hearing aid manufacturers today (Goldman-Sachs 2017). Silver-zinc rechargeable batteries are non-flammable, fully recyclable, have a higher energy density than zinc-air and NiMH and has a good discharge rate. Hearing aids utilizing silver-zinc technology can also interchange the silver-zinc battery for a disposable zinc-air battery. The disadvantage of silver-zinc is their lifecycle is approximately one year and the price of a new battery is relatively high. (Freeman, 2017) (Heuermann & Herbig 2016) \

Historically, rechargeable technology has not been used or pushed as the technology had not been available or optimal for usage until now. According to a survey by Hearing Tracker (2016), patients indicated having a full day of power on a single charge was very important to them. Recently, this issue has been addressed and all hearing aid manufacturers who advertise rechargeable technology claim you can expect more or less a full day's charge (even including the use of streaming) when following best practices. Most hearing aid manufacturers now have a rechargeable hearing aid option. The Hearing Tracker survey also revealed 89% of the 510 hearing aid user responders use disposable batteries but 70% said they would prefer rechargeable battery hearing aids. However, among the audiologists and other hearing health professionals surveyed, less than half (47%) said they currently dispense rechargeable hearing aids.

When dispensing hearing aids to a first-time hearing aid user, the audiologist must teach the patient the care and maintenance of the hearing aid, which includes information about the power and batteries of the hearing aids. According to The Guidelines for Hearing Aid Fittings for Adults (1998), the hearing aid fitting process should include assessment, treatment planning, selection, verification, orientation, and validation. These guidelines advocate for covering a significant amount of information, however in clinical practice the average allotted appointment

time for a hearing aid dispensing is one hour. According to a study by Severn et al, 2012, the highest stress factor for audiologists is time demand. A heavy patient caseload combined with inadequate time allocated to spend with patients is a common contributor to dissatisfaction and stress in healthcare professionals. (Freeborn et al, 2002).

Time demands not only negatively affect the audiologist, they negatively impact the patient as well. Time constraints is listed as one of the barriers to best practice and patient-centered care (Moore et al, 2017). Patient-centered care treats the patient as an individual with their own health experiences and encouraged patients to be active participants in the management of their own care through a trusting and therapeutic relationship between the provider and the patient. (Grenness et al 2014). Patient-centered care generates positive outcomes. More patients (69%) prefer a patient-centered interaction with their health care provider, more patients adhere to treatments when their provider practices patient-centered care by involving them in health decisions, and practitioners reported more satisfaction with their relationships with their patients when patient-centered care is observed (Swenson et al, 2004) (Michie et al, 2003) (Roter et al, 1997) Using patient-centered care, during the first hearing aid dispensing appointment, audiologists can motivate the patient to use their hearing aid by building a rapport with the patient, taking the time to listen to their experiences and working together on a routine that works for them. According to Grenness et al (2014) anecdotal evidence suggests that often audiologists have strict time constraints, set the agenda of the appointment, and play the dominant role in decision-making. With more time during the appointment, more counseling and discussion of patient needs can take place. Bastiaens et al (2007) found that medical practitioners felt older patients required more appointment time compared to younger patients, as they require more time to process and often are slower to understand information than younger people. The

majority of hearing aid users are older adults. Less time spent teaching about hearing aid care and maintenance would allow more time for other areas of focus, such as counseling.

Reese and Smith (2006) examined the recall of hearing aid orientation information by patients. Hearing aid orientation checklists were reviewed and several audiologists were asked to list topics expected to be covered in a hearing aid orientation for new users. This information was used to create a 25-item recall questionnaire called the Hearing Aid Probed Recall Inventory to be distributed to the participants. On this questionnaire, 5/25 questions were related to battery usage. The study tested the recall of the participants immediately following the hearing aid orientation (trial 1) as well as 4 weeks later (trial 2). For those questions related to batteries, majority of participants recalled the correct information at both trials regarding battery life, however for information on how to reorder batteries, low batteries, battery size, and what to do if a battery is swallowed, the number dropped to approximately half. While both disposable and rechargeable batteries require teaching the patient some information in those categories tested, for rechargeable batteries, the size of the battery is irrelevant and the battery itself is not at risk of being swallowed. Reordering batteries is not too much of a concern as the batteries only need to be reordered once a year and while patients should be taught how to tell when a battery is low, rechargeable batteries are not expected to run out during the day with typical use if fully charged at night. This simplifies/reduces the amount of information taught during the hearing aid orientation.

Objectives

The aim of this study was to determine whether there is a significant difference in time taken for counseling about care and maintenance of rechargeable hearing aid batteries as compared to traditional disposable batteries. Not only was the amount of time it took the patient

to insert/remove the disposable battery or place and remove the rechargeable hearing aid on the charger measured, but also the time spent teaching about battery management, the features of the batteries, and teachback from the patient to ensure they understood the information. Additionally a survey was administered to determine what features of a battery are important to the patient and which type of battery patients prefer. This study also sought to determine whether patients without visual or cognitive impairment might also benefit from and prefer rechargeable technology over disposable.

Methods

Participants

Fourteen adults (6 female, 8 male) served as participants ranging in age from 60 to 76 years old. The average age of participants was 64 years. Participants were recruited via flyers placed in the student lounge of the Audiology Department at the CUNY Graduate Center, at the university speech and hearing clinics at the CUNY Graduate Center, Hunter College Brookdale Campus, and Brooklyn College as well as through email recruitment sent to family and friends. Participants received a \$50 Amazon gift card for participating. Selection criteria included: adults 60+ years of age who have never had a hearing aid dispensing orientation. Participants of all levels of hearing status were accepted. Each participant underwent a visual and cognitive screener. Participants proceeded to the battery orientation sessions if they passed the visual and cognitive screener. The study design and all procedures performed were approved by The City University of New York Graduate Center (protocol number: 2018-1063)

Materials

The Snellen Eye Chart was used to screen for visual acuity. The Snellen Eye Chart is a chart that shows 11 rows of capital letters, beginning with a large single letter on the top row.

The number of letters in each row increases, moving from top to bottom. The letters in each row become progressively smaller (allowing more letters on each subsequent row). The Mini-Cog was used for screening cognitive impairment. The Mini-Cog is a 3-minute task that screens for cognitive impairment in older adults. It consists of two components, a 3-item recall test for memory and a Clock Drawing Task (CDT). Points are given for each correct task performed. The hearing aid used to demonstrate the battery orientations was the Oticon OPN Receiver-In-The-Ear hearing aid (Figure 1). The disposable battery used was the size 13 battery. The rechargeable battery hearing aid utilized was the Oticon OPN Receiver-In-The-Ear hearing aid fitted with the ZPower battery door and ZPower rechargeable battery (silver-zinc) along with the ZPower charging unit (Figure 2). The researcher utilized an orientation script (Appendix A, Appendix B) as a guideline to ensure all talking points were met. The order of the orientations was randomly assigned. Each orientation session was timed using the stopwatch function on an iPhone 7. During the battery orientations, a disposable/rechargeable orientation script (Appendix A, Appendix B) was utilized in order to ensure all talking points were met for each battery orientation. A survey of preferences that asked patients to rate the importance of different factors and pick a battery type and explain their preference (Appendix C) was given to the patient at the end of the session. Participants received a \$50 Amazon physical gift card for participating.



Figure 1. Oticon OPN Receiver-In-The-Ear hearing aid (Oticon.com)



Figure 2. Oticon OPN Receiver-In-The-Ear hearing aid with ZPower rechargeable charging unit, ZPower battery doors, and ZPower rechargeable batteries (Oticon.com)

Procedures

Data were collected in one session from each participant at the CUNY Graduate Center Audiology Suite. All participants signed an informed consent prior to beginning the study. Participants were screened for visual acuity using the Snellen Eye Chart. The eye chart was placed on the wall 10 feet away. Participants wore their own corrective lenses as needed for distance vision. The participant (using both eyes) read aloud the row letters on the chart beginning at the top and moving towards the bottom. The smallest row of letters the individual can accurately identify more than 50% determines visual acuity with both eyes. Participants passed the screener and were allowed to proceed if their visual acuity using both eyes (with corrective lenses) was 20/40 or better.

Following the visual screener, participants were screened for cognitive status using the Mini-Cog. A score of 3 and greater was required for the participant to pass the screener and proceed to the hearing aid battery orientations. Participants who passed the visual acuity and Mini-Cog screener received both a disposable battery orientation and a rechargeable battery orientation. Timing of each session began once the topic of battery care and maintenance was introduced. The orientation session included any questions and clarification needed by the patient. At the end of each orientation, participants were asked to teachback by demonstrating and explaining what to do when the battery is low and by answering two informational questions that were covered during the orientation. Timing stopped when the participants were able to complete the teachback successfully. Following completion of both orientations, participants were asked to complete a survey about preferences, ease of use, and willingness to pay. At the

end of the survey, participants were asked to choose whether they prefer the disposable battery or rechargeable battery hearing aids and to explain why.

Results

All participants were 60+ years of age and passed the visual acuity and cognitive screeners and thus had good visual acuity and no cognitive impairment. Hearing status of the participants was unknown, however none of the participants had ever pursued hearing aids or consequently participated in a hearing aid dispensing. For all but one participant, the rechargeable battery orientation required less time than the disposable battery orientation (Figure 3). On average, the disposable battery orientation took 10.4 minutes and the rechargeable battery orientation took 7.62 minutes, an average difference of 2.78 minutes.

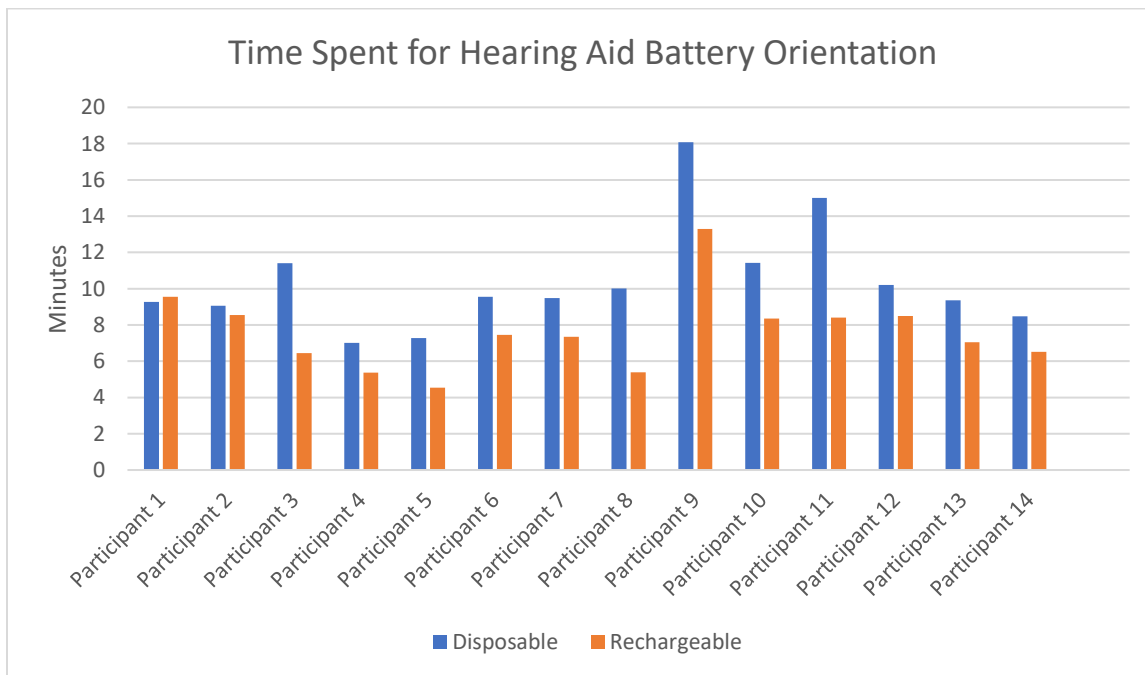
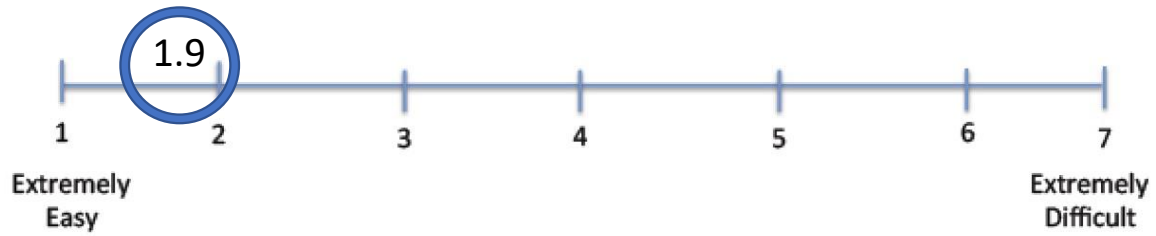


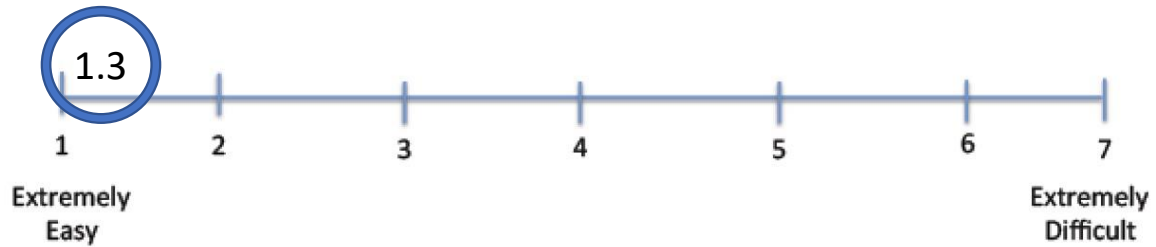
Figure 3. Time in Minutes Spent for Hearing Aid Battery Orientation

According to the survey, participants indicated both the disposable and rechargeable battery were easy to handle. Results of the survey indicate convenience of replacing a battery only once a year, not worrying about replacing batteries during daily activities, and environmentally friendliness were important to the participants. These features are all found in rechargeable battery hearing aids. Most participants indicated they would be willing to pay for the rechargeable unit over the disposable batteries.

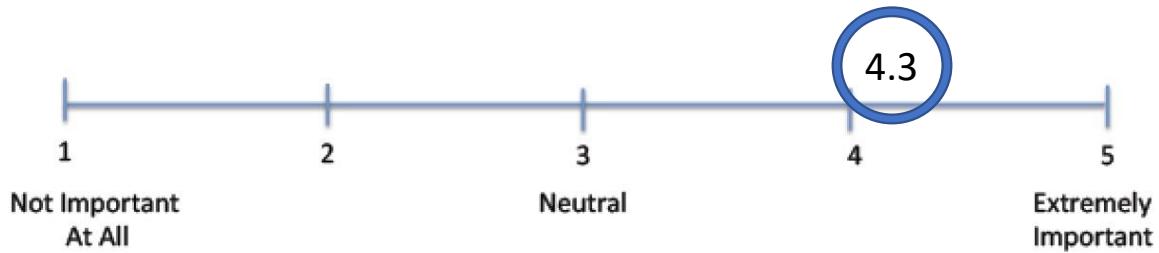
1. How easy was it to use the disposable hearing aid batteries? (Please circle one)



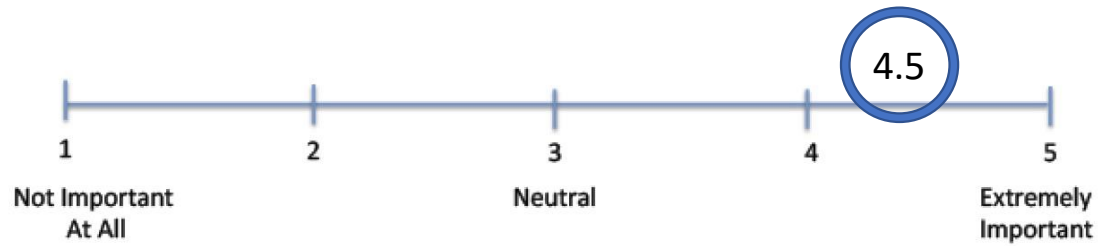
2. How easy was it to use the rechargeable hearing aid batteries? (Please circle one)



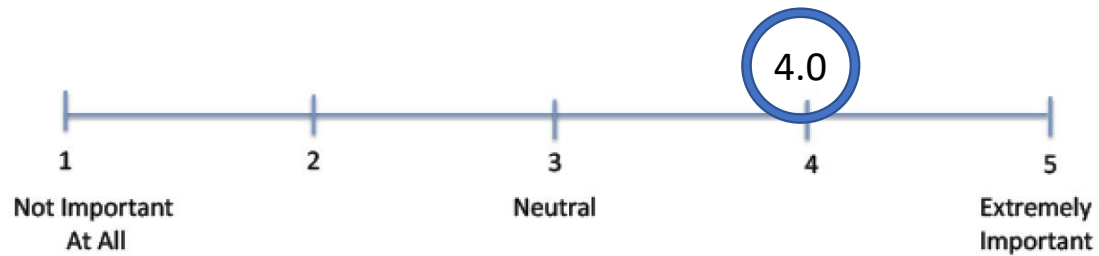
3. How important is it for you to have the convenience of only replacing your battery once a year?



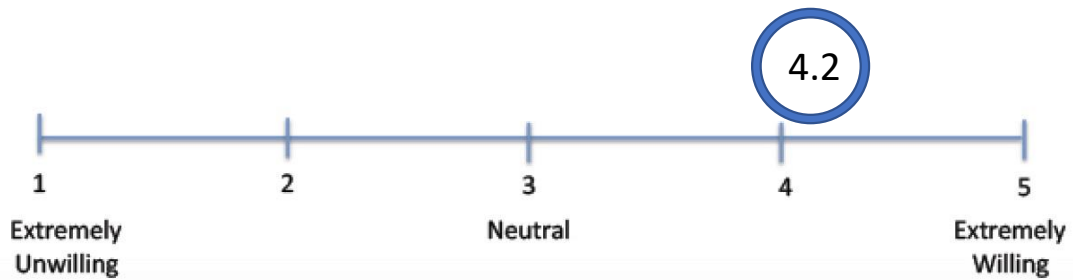
4. How important is it for you to not have to worry about charging/replacing your battery when you are going about your daily activities?



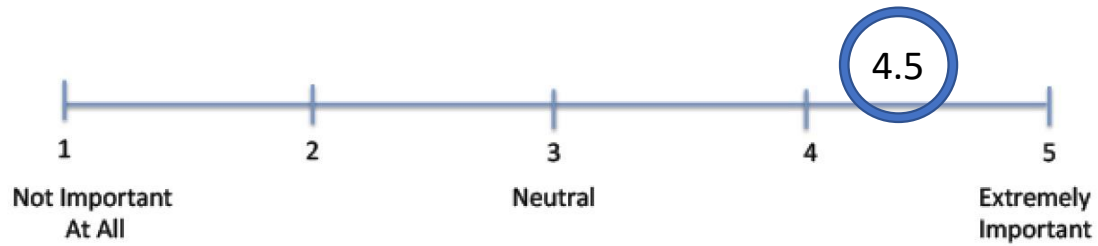
5. How important is the environmental friendliness of rechargeable hearing aids to you?



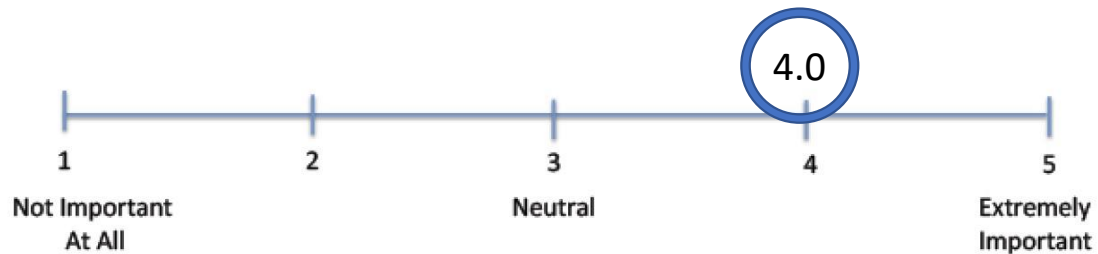
6. How willing would you be to pay for the rechargeable unit instead of the disposable batteries?



4. How important is it for you to not have to worry about charging/replacing your battery when you are going about your daily activities?



5. How important is the environmental friendliness of rechargeable hearing aids to you?



6. How willing would you be to pay for the rechargeable unit instead of the disposable batteries?

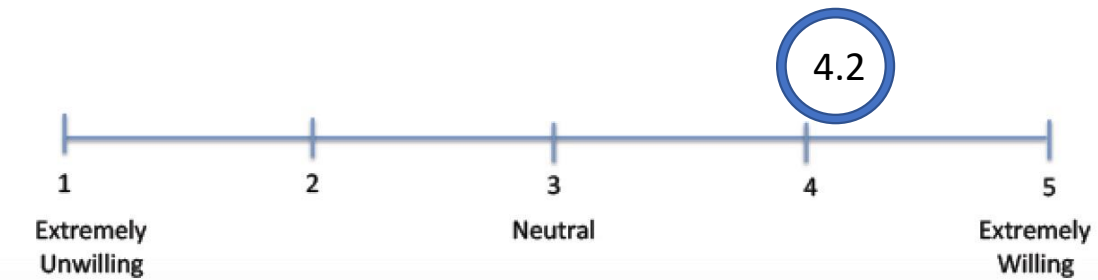


Figure 4. Average rating for survey questions

At the end of the survey, participants were asked to choose whether they preferred to use disposable or rechargeable batteries and to explain why. Even though participants indicated both the disposable and rechargeable battery were relatively easy to handle, every participant indicated he/she would choose rechargeable batteries over disposable batteries. The majority (11

out of 14 participants) indicated the reason they would choose rechargeable batteries over disposable batteries was because of convenience. One participant indicated changing the disposable batteries was “hard on my eyes and hands.” For patients with poor visual acuity and dexterity issues, this task could prove even more difficult and frustrating.

DISCUSSION AND CLINICAL IMPLICATIONS

Rechargeable batteries should be considered as an option when discussing hearing aid styles with patients. Results of this study indicate that rechargeable battery hearing aids are more convenient and easier to manage than hearing aids with disposable batteries for patients without visual or cognitive issues. Not only is this beneficial to the patient in their daily usage of the hearing aid, the amount of time spent teaching the patient about battery management during hearing aid dispensing is less than the amount of time that would be spent teaching about disposable batteries. While the average difference in time was not large (2.78 minutes), in clinical practice, even a few minutes saved during the hearing aid dispensing appointment could be spent in other areas including implementing patient-centered care or shared decision making during counseling. More time spent on patient-centered care could contribute to a more positive outcome on retention rates on hearing aids. Despite having good visual acuity, one participant indicated he could imagine constantly having to change the disposable batteries would cause strain on his eyes and hands. This could contribute to poor hearing aid self-efficacy, affecting the patient’s confidence and consistent use of the hearing aids. All participants indicated they would prefer the rechargeable battery hearing aids, therefore audiologists should offer rechargeable technology as an option to patients of all visual, cognitive, and dexterity levels and perhaps as an option for those experienced disposable hearing aid battery users as well.

LIMITATIONS

Limitations of the current study include a relatively homogenous participant population, not necessarily reflective of the typical hearing aid user population. Participants in this study did not have a confirmed hearing loss, were not interested in pursuing hearing aids, did not have any visual or cognitive impairments, and were native English speakers. Typical populations participating in a hearing aid orientation will have some degree of hearing loss and possibly other co-morbidities. Another limitation of this study was that the researcher followed a script in order to ensure all talking points were met. During a hearing aid dispensing orientation, audiologists do not always cover all information about batteries and may either emphasize or not deliver certain information. Participants in this study had never had a hearing aid orientation before and some had limited knowledge of hearing aids. Consequently, during the battery orientations, some participants had more general questions unrelated to battery features. These questions and time spent answering them were incorporated into the time measured. This may have erroneously extended time measurements. However, from a clinical perspective, patients may have questions or participate in general banter during the hearing aid orientation, therefore including this time in the time measurements increased external validity.

FUTURE RESEARCH

Future research should address the limitations of the current study and focus on actual patients interested in pursuing hearing aids in order to determine the difference in time spent during battery orientations in a clinical setting. It would be interesting to examine whether audiologists and hearing aid dispensers found explaining rechargeable battery hearing aid usage to be easier than orienting the patient to disposable batteries. To determine patient preference,

future studies might have patients try the disposable battery hearing aid as well as the rechargeable battery hearing aid for a period of time and ask for preference after the trial. More studies should examine outcomes and satisfaction of hearing aid users who utilize rechargeable technology.

Appendix A

Traditional Disposable Hearing Aid Battery Orientation

A hearing aid is an electronic device that runs on batteries.

Batteries come in different sizes, these (Oticon OPN) use a size 312 which have a brown sticker.

They can be bought at the local drugstore, Costco, online or from your audiologist. They do have an expiration date so keep that in mind if you want to buy in bulk.

Removing the sticker activates it. Waiting a minute before putting the battery in, gives time for the air to fully activate it and helps it last longer.

Don't take the sticker off until you are ready to use the battery. Once removed, the battery life slowly starts draining.

To put the battery in, open the battery door with your fingernail

*demonstrate opening the battery door

* have the participant try opening the door

The battery has two sides. The flat side has a + sign and should be facing up.

* put battery inside

Change the batteries over a table in case you drop them. Good lighting is important to see what you are doing. If needed, you can use a magnifying glass. If you are having trouble, use a magnetic tool to help.

* demonstrate magnetic tool

*have patient demonstrate magnetic tool

Don't force the battery door closed. If it doesn't close easily, check if the flat side is up. Closing the door turns the hearing aid on.

* have the patient put the battery inside and close the door.

When the battery is low, you will hear 4 beeps. This means you need to replace them soon.

Batteries usually last 5 – 10 days. Battery life depends on your level of hearing loss and what programs you are using. Streaming or using Bluetooth often shortens battery life.

Carry spare batteries with you in case yours run out while you are outside.

If you're worried about the battery dying while out, change them on the same day or days each week (such as every Friday or every 5 days.) You don't have to wait for the batteries to run out before changing them. Change both batteries at the same time to make sure they don't run out at different times.

Opening the battery door turns the hearing aid off. Open the doors at night so batteries are not draining throughout the night.

Keep batteries away from children and pets. They are dangerous if swallowed. If swallowed, call the National Poison Center at 1-800-222-1222 or National Battery Ingestion Hotline at 202-625-3333

Batteries should be stored in a cool dry place. Don't keep them in the fridge.

Teach-back questions

To make sure I've explained things clearly,

Could you show me and explain how to insert the battery and take it out?

What happens when you remove the sticker on the battery?

How do you know when you need to change the battery?

Appendix B

Rechargeable battery orientation

Hearing aids are electronic devices so they need to be recharged like your cell phone.

They come with a charging station and a cable that needs to be plugged into an outlet.

*demonstrate plugging usb into charger

Make sure the charging station is plugged in before putting your hearing aids in. Otherwise the hearing aid batteries will drain.

The lights on the charger flash green when it is charging. A solid green light means the hearing aids are done charging.

To charge, place the hearing aids in the charging station. Make sure they are clean and dry before putting them in. Wipe off the contacts (bottom of the hearing aid) before placing them on the charger for best function.

*demonstrate

If they do not fit easily, they may be facing the wrong way. You can mark the charger with a sticker and draw an arrow to indicate the correct orientation.

*have participant demonstrate

Before going to sleep, put your hearing aids in the charger. It takes about 3 - 4 hours to fully charge.

When fully charged, they last about 18 – 19.5 hours.

If you do a lot of streaming or use Bluetooth often, the battery life will drain faster. (for example for 4 hours of TV and 1 hour of iphone streaming, battery lasts approximately 15 – 16 hours)

If you forget to charge your hearing aids or the battery drains and you don't have time to recharge, you can put disposable batteries in your hearing aids and use those. You should carry a size 13 or 312 battery and always carry a spare.

*demonstrate how to insert disposable battery

Taking your hearing aids off the charger turns them on. If possible, do not remove the hearing aids until fully charged.

If your batteries are low, they will beep 4 times. This means you need to recharge them soon.

The rechargeable batteries will last about a year at which time you will need to go back to your audiologist to replace for the fee agreed upon when you purchased your rechargeable battery.

Teach-back questions

To make sure I've explained things clearly,

Could you demonstrate and explain how to charge the hearing aids?

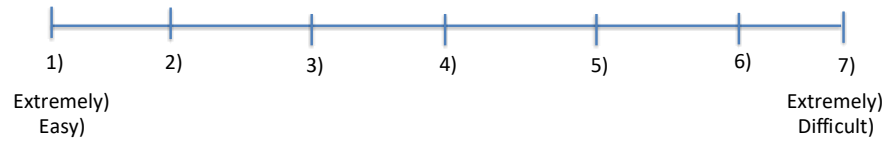
How do you know if your hearing aids are charging?

How do you turn your hearing aids on?

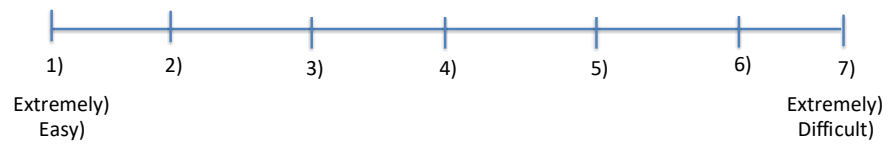
Appendix C

Survey

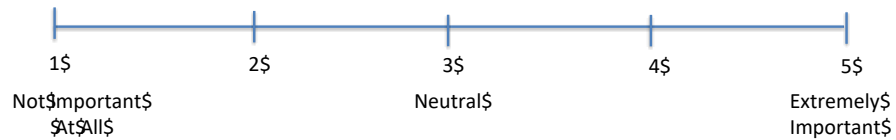
1. How easy was it to use the disposable hearing aid batteries? (Please circle one)



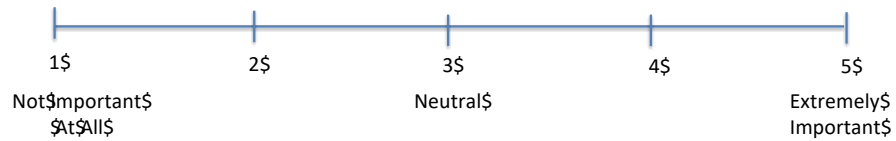
2. How easy was it to use the rechargeable hearing aid batteries? (Please circle one)



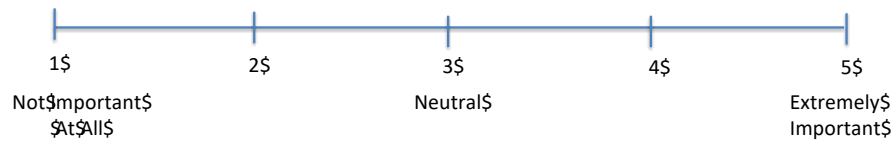
3. How important is it for you to have the convenience of only replacing your battery once a year?



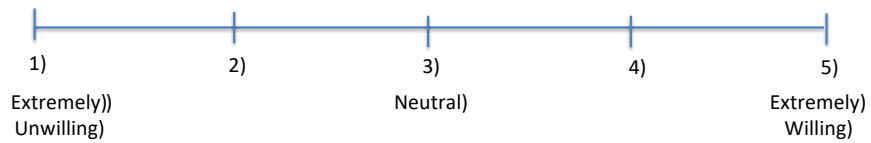
4. How important is it for you to not have to worry about charging/replacing your battery when you are going about your daily activities?



5. How important is the environmental friendliness of rechargeable hearing aids to you?



6. How willing would you be to pay for the rechargeable unit instead of the disposable batteries?



7. Would you prefer to use disposable batteries or rechargeable batteries?

Circle one: disposable batteries or rechargeable batteries

Please explain why:

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