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- Email customerservice@AudiologyOnline.com
MarkeTrak 10 survey results: Hearing aid benefit and satisfaction rates remain high

Erin M. Picou

Featuring Thomas Powers

28 February 2020

Acknowledgements / Disclosures

- Erin M. Picou
  - Employed by VUMC
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  - Honorarium in exchange for today’s webinar
- Today’s webinar
  - Thomas Powers
  - Hearing Industries Association
  - Seminars in Hearing
Methodological Overview

Today’s respondents…

- Completed the MarkeTrak 10 survey
- Are hearing aid owners
- Fitted by a professional
- Control group with a matched degree of hearing difficulty (no hearing aids)
Learning Outcomes

After this course, participants will be able to:

- Describe current rates of hearing aid satisfaction
- Describe the effects of hearing aid use on mental health and quality of life
- Describe the current status of the hearing aid marketplace in terms of hearing aid use and ownership.

Overarching Themes

- What’s going well?
  - Areas where hearing aids providing benefit
  - Areas where people report satisfaction
  - Skills hearing aid users seem to have mastered

- What could we do better?
  - Areas where technologies could be improved
  - Skills we could teach clinically
  - Ways service delivery could be improved
Who are you?

- Let’s do a quick poll

Hearing loss has consequences

- Reduced speech recognition, especially in noise

- Increased depressive symptoms

- Increased risk of isolation

- Reduced quality of life
Hearing aids can help

- Improved speech recognition
  - Hearing aids general (e.g., Humes et al 2002; Hornsby 2013; Shanks et al 2002)
  - Noise reduction (e.g., Wu 2010; Sarampalis et al 2009; Ricketts & Henry 2002)
  - Streaming (e.g., Picou & Ricketts 2011; Au et al 2019)

- Downstream consequences
  - Depressive symptoms (e.g., Acar et al 2011; Gopinath et al 2009)
  - Isolation (e.g., Weinstein et al 2016; Joore et al 2003)
  - Quality of life (e.g., Chisolm et al 2007; Kitterick & Ferguson 2018)

Hearing aids don’t cure hearing loss

- Low adoption rates (see Jorgenson’s article)?
- Low benefit rates?
- Low use rates?
- Low satisfaction rates?
Current Trends

Most hearing aids were two years old or younger

Age of Current Hearing Aid
Current Owners (n=969)

- Less than one year: 7%
- One year: 26%
- Two years: 17%
- Three years: 14%
- Four years: 5%
- Five years: 12%
- Six or more years: 19%

Average age = 4.2 years
New hearing aids don’t break very often

Frequency of Repair
(Owners who got HAs the last 5 years (n=702))

- 5+ times, 1%
- 4-5 times, 4%
- 2-3 times, 19%
- Once, 27%
- Never, 50%

What is the most popular hearing aid style?

- Let’s do a quick poll
### Receiver-in-the-canal (RIC)最流行

<table>
<thead>
<tr>
<th>A device that fits only inside of the ear (no part of the device sits behind the ear)</th>
<th>A device that sits behind the ear and has a tube that connects to a part that goes inside the ear</th>
</tr>
</thead>
<tbody>
<tr>
<td>“In the Ear” (Completely fills ear)</td>
<td>“Behind the Ear”</td>
</tr>
<tr>
<td>“In the Canal” (Partially fills ear)</td>
<td>“Receiver in the Canal”</td>
</tr>
<tr>
<td>“Completely in the Canal” (But still somewhat visible)</td>
<td>Part that connects to the tube</td>
</tr>
<tr>
<td>“Invisible” because you cannot see it when inserted</td>
<td>(n=113)</td>
</tr>
<tr>
<td>7%</td>
<td>12%</td>
</tr>
<tr>
<td>8%</td>
<td>60%</td>
</tr>
<tr>
<td>4%</td>
<td>61%</td>
</tr>
<tr>
<td>4%</td>
<td>24%</td>
</tr>
<tr>
<td>26%</td>
<td>14%</td>
</tr>
</tbody>
</table>

### Which “internal” features are popular?

<table>
<thead>
<tr>
<th>Feature</th>
<th>HA Owners who got HA(s) in last 5 years (n=702)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Volume control</td>
<td>67%</td>
</tr>
<tr>
<td>Program button</td>
<td>41%</td>
</tr>
<tr>
<td>Directional microphones</td>
<td>28%</td>
</tr>
<tr>
<td>Telecoil</td>
<td>20%</td>
</tr>
<tr>
<td>Tinnitus masker</td>
<td>14%</td>
</tr>
<tr>
<td>Rechargeable batteries</td>
<td>14%</td>
</tr>
<tr>
<td>Rechargeable hearing aid</td>
<td>15%</td>
</tr>
</tbody>
</table>
Which “external” features are popular?

### EXTERNAL ACCESSORIES OR “APPS”

<table>
<thead>
<tr>
<th></th>
<th>HA Owners who got HA(s) in last 5 years (n=702)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Hearing aid remote control</td>
<td>21%</td>
</tr>
<tr>
<td>Body-worn Bluetooth device</td>
<td>15%</td>
</tr>
<tr>
<td>TV streamer</td>
<td>11%</td>
</tr>
<tr>
<td>Companion microphone</td>
<td>7%</td>
</tr>
<tr>
<td>Downloadable ‘app’ for smart phones</td>
<td>17%</td>
</tr>
</tbody>
</table>

Those who have remotes and apps, use them often

**Frequency of Use by Accessory/App**

- Never/not yet
- Varies
- Less than monthly
- Monthly
- Weekly
- Daily

**Extrinsic Services**

|                                | HA Owners who got HA(s) in last 5 years (n=702) |
|                                | Yes   | No    | Not sure |
| Hearing aid remote control     | 21%   | 69%   | 10%       |
| Body-worn Bluetooth device     | 15%   | 73%   | 12%       |
| TV streamer                     | 11%   | 79%   | 10%       |
| Companion microphone            | 7%    | 80%   | 13%       |
| Downloadable ‘app’ for smart phones | 17%   | 68%   | 15%       |
What about wireless connectivity with smartphones?

Most adults have cell phones

A. Have Cell Phone

B. Cell Phone Used Most Often is a Smartphone
What about wireless connectivity?

<table>
<thead>
<tr>
<th>“WIRELESS CAPABILITIES”</th>
<th>HA Owners who got HA(s) in last 5 years (n=702)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The ability to 'link' volume or program changes</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>43%</td>
</tr>
<tr>
<td>The ability to stream sound from a TV, cell phone or computer with intermediary device</td>
<td></td>
</tr>
<tr>
<td></td>
<td>26%</td>
</tr>
<tr>
<td>The ability to stream sound from an iPhone directly into your hearing aids,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>13%</td>
</tr>
<tr>
<td>NET: Wireless hearing aid (calculated)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>54%</td>
</tr>
</tbody>
</table>

What are people doing with their iPhones?

- Adjusted HA volume
- Streamed audio or music...
- Reduced volume of sounds...
- Changed programs for different...
- Saved (or geo-tagged) a physical...
- Something else
- Have not used yet

0% 10% 20% 30% 40% 50% 60%
Satisfaction

SATISFACTION SCALE AND SCORES:

Bottom-3 Box Score

Very Dissatisfied=
1 2 3

Top-3 Box Score

Very Satisfied=
5 6 7

How many people are satisfied with their hearing aids?

- Let’s do a quick poll
Hearing

More than 8 in 10 hearing aid users are satisfied

Hearing Aid (HA) Satisfaction Rates Among Current Owners Over Time by Study
(Top-3 Box: Current Owners)

<table>
<thead>
<tr>
<th>Study</th>
<th>2015</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>EuroTrak - FRA</td>
<td>84%</td>
<td>82%</td>
</tr>
<tr>
<td>EuroTrak - UK</td>
<td>70%</td>
<td>74%</td>
</tr>
<tr>
<td>EuroTrak - GER</td>
<td>77%</td>
<td>76%</td>
</tr>
<tr>
<td>MarkeTrak</td>
<td>81%</td>
<td>83%</td>
</tr>
</tbody>
</table>

Factors related to satisfaction

- Perceived hearing difficulty
- Initial attitude toward hearing aids
  - Wilson & Stephens (2003); Gatehouse (1994)
- Hearing loss self management
  - Convery et al (2019)
- Self-efficacy
  - Ferguson et al (2016)
- Perceived social support
  - Singh et al (2015)
Factors not related to satisfaction

- Puretone average
  - Cox et al (2007); Gatehouse (1994); Hickson (1999)
- Age
  - Uriarte et al (2005); Gatehouse (1994); Hickson (1999)
- Gender
  - Uriarte et al (2005); Gatehouse (1994); Hickson (1999); Jerram & Purdy (2001)
- Employment status
  - Hickson (1999); Jerram & Purdy (2001)

MT10 hearing aid factors related to satisfaction

- Hearing aid age
  - Newer hearing aid \(\rightarrow\) more satisfaction
- Hearing aid cost
  - $3000 / aid \(\rightarrow\) more satisfaction
- Hearing aid style
  - BTE users \(\rightarrow\) more satisfied
- Hearing aid features
  - Some features \(\rightarrow\) more satisfied
Respondents are more satisfied with newer hearing aids

**Overall Satisfaction by Age of Hearing Aid**

<table>
<thead>
<tr>
<th>Age of Hearing Aid</th>
<th>1 Very Dissatisfied</th>
<th>2</th>
<th>3</th>
<th>4 Neutral</th>
<th>5</th>
<th>6</th>
<th>7 Very Satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;=1 yr (n=294)</td>
<td>4%</td>
<td>7%</td>
<td>14%</td>
<td>31%</td>
<td>41%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 to 3 yrs (n=262)</td>
<td>4%</td>
<td>9%</td>
<td>19%</td>
<td>27%</td>
<td>37%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 to 5 yrs (n=146)</td>
<td>4%</td>
<td>7%</td>
<td>8%</td>
<td>18%</td>
<td>27%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6+ yrs (n=164)</td>
<td>6%</td>
<td>6%</td>
<td>8%</td>
<td>16%</td>
<td>26%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Past owners (n=180)</td>
<td>14%</td>
<td>9%</td>
<td>7%</td>
<td>21%</td>
<td>12%</td>
<td>17%</td>
<td>21%</td>
</tr>
</tbody>
</table>

Respondents who paid more per hearing aid are more satisfied

**Overall Satisfaction by Price of HA**

<table>
<thead>
<tr>
<th>Price of HA</th>
<th>Bot-3</th>
<th>Mid</th>
<th>Top-3</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;$1500 (n=186)</td>
<td>11%</td>
<td>12%</td>
<td>77%</td>
</tr>
<tr>
<td>$1500-$2999 (n=212)</td>
<td>12%</td>
<td>7%</td>
<td>80%</td>
</tr>
<tr>
<td>$3000+ (n=146)</td>
<td>9%</td>
<td>6%</td>
<td>85%</td>
</tr>
</tbody>
</table>
Respondents with BTEs are more satisfied

Satisfaction by Hearing Aid Type
(Current Owners (n=969))

Some hearing aid features related to higher levels of satisfaction
Hearing aid features associated with satisfaction summary

- Directional microphones
- Telecoil
- App for smartphone
- Bluetooth device
- Rechargeable batteries
- Tinnitus masker
- Wireless hearing aid

Hearing aid features not associated with satisfaction

- Remote control
- Companion microphone
- TV streamer
What drives hearing aid satisfaction?

Relative Impact of HA Satisfaction “Drivers”

<table>
<thead>
<tr>
<th>Factor</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>HA Performance/Sound</td>
<td>35</td>
</tr>
<tr>
<td>HCP Effectiveness</td>
<td>0.20</td>
</tr>
<tr>
<td>HA Physical Qualities</td>
<td>0.24</td>
</tr>
<tr>
<td>HA Maintenance</td>
<td>0.25</td>
</tr>
<tr>
<td>Costs (upfront and ongoing)</td>
<td>0.42</td>
</tr>
<tr>
<td></td>
<td>0.67</td>
</tr>
</tbody>
</table>

TOP CONTRIBUTORS IN EACH SET:

- Ability to tell direction
- Natural sounding
- Rich sound
- Minimizes background noise
- Clear tone

- Professional practitioner
- Organized/efficient practice
- Quality counseling throughout

- Appearance
- Visibility
- Size

- Ease of cleaning/care
- Ease of changing batteries

- Out of pocket cost
- Value

51% Hearing Well
- Hearing better
- Can converse
- Better than old HA
- Hear new sounds
- Better for TV, phone, etc.

22% Quality Sound
- Clear
- Manages noise
- Works in multiple environments
- Little feedback

22% Product Functionality
- Good technology
- Quality product
- Functions well
- Comfortable
- Easy to use
- Bluetooth/phone
- Small
- Attractive

6% HCP Positive
- Good people
- Good service

6% Reasonable Price
Hearing aid users are **most** satisfied with product quality

**Satisfaction with Overall Key Attributes of Hearing Aids**
(Owners who got HA(s) in last 5 years (n=702))

<table>
<thead>
<tr>
<th>Attribute</th>
<th>1 Very Dissatisfied</th>
<th>2</th>
<th>3</th>
<th>4 Neutral</th>
<th>5</th>
<th>6</th>
<th>7 Very Satisfied</th>
<th>Top Box Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product quality</td>
<td>4%</td>
<td>8%</td>
<td>10%</td>
<td>23%</td>
<td>43%</td>
<td>55%</td>
<td>88%</td>
<td></td>
</tr>
<tr>
<td>Ease of use</td>
<td>5%</td>
<td>9%</td>
<td>14%</td>
<td>22%</td>
<td>43%</td>
<td>53%</td>
<td>88%</td>
<td></td>
</tr>
<tr>
<td>Appearance (visibility, aesthetics, etc.)</td>
<td>4%</td>
<td>8%</td>
<td>14%</td>
<td>27%</td>
<td>44%</td>
<td>53%</td>
<td>88%</td>
<td></td>
</tr>
<tr>
<td>Sound quality</td>
<td>11%</td>
<td>10%</td>
<td>27%</td>
<td>42%</td>
<td>48%</td>
<td>53%</td>
<td>88%</td>
<td></td>
</tr>
<tr>
<td>Effort required for maintenance</td>
<td>10%</td>
<td>11%</td>
<td>23%</td>
<td>42%</td>
<td>47%</td>
<td>53%</td>
<td>88%</td>
<td></td>
</tr>
<tr>
<td>Physical comfort</td>
<td>10%</td>
<td>11%</td>
<td>23%</td>
<td>42%</td>
<td>47%</td>
<td>53%</td>
<td>88%</td>
<td></td>
</tr>
<tr>
<td>Effectiveness of enhanced features</td>
<td>15%</td>
<td>14%</td>
<td>27%</td>
<td>52%</td>
<td>57%</td>
<td>65%</td>
<td>88%</td>
<td></td>
</tr>
<tr>
<td>Value (quality/ performance vs. price)</td>
<td>8%</td>
<td>7%</td>
<td>13%</td>
<td>20%</td>
<td>43%</td>
<td>53%</td>
<td>88%</td>
<td></td>
</tr>
<tr>
<td>Out of pocket price paid</td>
<td>6%</td>
<td>23%</td>
<td>13%</td>
<td>12%</td>
<td>38%</td>
<td>48%</td>
<td>88%</td>
<td></td>
</tr>
</tbody>
</table>

% of respondents rating each attribute as **very satisfied**, **top box**.
Hearing aid users are **least** satisfied with loud sounds

**Satisfaction with Physical/Sound Attributes of Hearing Aids**
(Owners who got HA(s) in last 5 years)

- **Reliability**
- **Durability (how often it needs repair)**
- **Clarity of tone and sound**
- **Appearance/look (e.g., color)**
- **Visibility to others**
- **Size**
- **How 'natural' things sound**
- **Richness or fidelity of sound**
- **Comfort when listening to loud sounds**

<table>
<thead>
<tr>
<th>Attribute</th>
<th>1 Very Dissatisfied</th>
<th>2</th>
<th>3</th>
<th>4 Neutral</th>
<th>5</th>
<th>6</th>
<th>7 Very Satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reliability</td>
<td>15%</td>
<td>11%</td>
<td>24%</td>
<td>34%</td>
<td>54%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Durability (how often it needs repair)</td>
<td>10%</td>
<td>9%</td>
<td>22%</td>
<td></td>
<td>55%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clarity of tone and sound</td>
<td>13%</td>
<td>19%</td>
<td>20%</td>
<td></td>
<td>52%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appearance/look (e.g., color)</td>
<td>11%</td>
<td>8%</td>
<td>26%</td>
<td></td>
<td>50%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visibility to others</td>
<td>13%</td>
<td>8%</td>
<td>23%</td>
<td></td>
<td>51%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size</td>
<td>14%</td>
<td>8%</td>
<td>23%</td>
<td></td>
<td>50%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>How 'natural' things sound</td>
<td>12%</td>
<td>14%</td>
<td>20%</td>
<td></td>
<td>50%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Richness or fidelity of sound</td>
<td>12%</td>
<td>12%</td>
<td>20%</td>
<td></td>
<td>38%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comfort when listening to loud sounds</td>
<td>15%</td>
<td>14%</td>
<td>14%</td>
<td>27%</td>
<td>24%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Hearing aid users are **most** satisfied with ease of use

**Level of Satisfaction with Functional Aspects of Current HAs**
(Owners who got HA(s) in last 5 years)

- **Ease of insertion/removal of hearing aid(s)**
- **Ease of changing the battery**
- **Ease of cleaning/care (e.g., wax removal, etc.)**
- **Ease of adjusting settings (e.g., volume)**
- **Degree it manages whistling/feedback/buzzing**
- **Ability to tell direction from which sound is coming**
- **Battery life**
- **Ability to minimize background noise**
- **Ability to mask or reduce the negative effects of tinnitus**

<table>
<thead>
<tr>
<th>Function</th>
<th>1 Very Dissatisfied</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>Very Satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ease of insertion/removal of hearing aid(s)</td>
<td>7%</td>
<td>8%</td>
<td>23%</td>
<td>36%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ease of changing the battery</td>
<td>11%</td>
<td>13%</td>
<td>29%</td>
<td>43%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ease of cleaning/care (e.g., wax removal, etc.)</td>
<td>13%</td>
<td>11%</td>
<td>23%</td>
<td>48%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ease of adjusting settings (e.g., volume)</td>
<td>10%</td>
<td>15%</td>
<td>17%</td>
<td>23%</td>
<td>32%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Degree it manages whistling/feedback/buzzing</td>
<td>10%</td>
<td>15%</td>
<td>17%</td>
<td>23%</td>
<td>32%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to tell direction from which sound is coming</td>
<td>10%</td>
<td>15%</td>
<td>26%</td>
<td>26%</td>
<td>32%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Battery life</td>
<td>8%</td>
<td>15%</td>
<td>17%</td>
<td>23%</td>
<td>32%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to minimize background noise</td>
<td>10%</td>
<td>15%</td>
<td>26%</td>
<td>26%</td>
<td>32%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to mask or reduce the negative effects of tinnitus</td>
<td>10%</td>
<td>15%</td>
<td>26%</td>
<td>26%</td>
<td>32%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Satisfaction Summary

- 8 of 10 hearing aid users are satisfied
  - Newer hearing aids
  - Cost >$3000
  - BTEs
    - Features active (not remote microphone)
- Drivers of hearing aid satisfaction
  - Sound quality
  - Hearing care professional effectiveness

Satisfaction Summary

- Things more hearing aid users are satisfied with
  - Product quality
  - Ease of use
  - Appearance
  - Ease of insertion/ removal
  - Ease of changing the battery
  - Reliability
  - Durability
Satisfaction Summary

- Things fewer hearing aid users are satisfied with
  - Effectiveness of advanced features
  - Value
  - Out of pocket price
  - Naturalness of sound
  - Richness / fidelity of sound
  - Comfort in loud sounds
  - Minimize background noise
  - Tinnitus masking

Hearing Aid Benefits

Communication
Mental Health
# Communication Benefits

## Hearing aid users are most satisfied in small conversations

<table>
<thead>
<tr>
<th>Top-3 Box Satisfaction (on 7-point scale)</th>
<th>HA OWNERS - Age of HA</th>
<th>All Non-Owners</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All Owners (n=969)</td>
<td>HA &lt;=1 years (n=294)</td>
</tr>
<tr>
<td>In conversations with 1 person</td>
<td>86%</td>
<td>88%</td>
</tr>
<tr>
<td>At home with family members</td>
<td>81%</td>
<td>84%</td>
</tr>
<tr>
<td>In the workplace</td>
<td>81%</td>
<td>92%</td>
</tr>
<tr>
<td>In conversations with small groups</td>
<td>78%</td>
<td>83%</td>
</tr>
<tr>
<td>When listening to music</td>
<td>78%</td>
<td>78%</td>
</tr>
<tr>
<td>When watching TV with others</td>
<td>77%</td>
<td>82%</td>
</tr>
<tr>
<td>Outdoors</td>
<td>77%</td>
<td>83%</td>
</tr>
<tr>
<td>During leisure activities</td>
<td>77%</td>
<td>79%</td>
</tr>
<tr>
<td>In a store, when shopping</td>
<td>77%</td>
<td>80%</td>
</tr>
<tr>
<td>When riding in a car</td>
<td>74%</td>
<td>81%</td>
</tr>
<tr>
<td>When talking to children</td>
<td>73%</td>
<td>77%</td>
</tr>
<tr>
<td>When talking on a cell phone</td>
<td>73%</td>
<td>80%</td>
</tr>
<tr>
<td>At a movie theater</td>
<td>71%</td>
<td>74%</td>
</tr>
<tr>
<td>In conversations with large groups</td>
<td>70%</td>
<td>77%</td>
</tr>
<tr>
<td>When trying to follow conversations in noise</td>
<td>68%</td>
<td>76%</td>
</tr>
<tr>
<td>In a classroom (as observer or student)</td>
<td>66%</td>
<td>69%</td>
</tr>
<tr>
<td>Overall, across all listening situations</td>
<td>78%</td>
<td>83%</td>
</tr>
</tbody>
</table>

Most satisfied

Least satisfied
Hearing aids help in noise and large groups

<table>
<thead>
<tr>
<th>Top-3 Box Satisfaction (on 7-point scale)</th>
<th>All Owners</th>
<th>All Non-Owners</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>(n=969)</td>
<td>(n=2013)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>When trying to follow conversations in noise</td>
<td>68%</td>
<td>27%</td>
<td>41%</td>
</tr>
<tr>
<td>In conversations with large groups</td>
<td>70%</td>
<td>30%</td>
<td>40%</td>
</tr>
<tr>
<td>When watching TV with others</td>
<td>77%</td>
<td>40%</td>
<td>37%</td>
</tr>
<tr>
<td>In conversations with small groups</td>
<td>78%</td>
<td>43%</td>
<td>35%</td>
</tr>
<tr>
<td>At home with family members</td>
<td>83%</td>
<td>48%</td>
<td>33%</td>
</tr>
<tr>
<td>In the workplace</td>
<td>83%</td>
<td>48%</td>
<td>33%</td>
</tr>
<tr>
<td>In a larger lecture hall</td>
<td>70%</td>
<td>37%</td>
<td>33%</td>
</tr>
<tr>
<td>In a store, when shopping</td>
<td>77%</td>
<td>46%</td>
<td>32%</td>
</tr>
<tr>
<td>Outdoors</td>
<td>77%</td>
<td>46%</td>
<td>31%</td>
</tr>
<tr>
<td>When talking to children</td>
<td>73%</td>
<td>44%</td>
<td>29%</td>
</tr>
<tr>
<td>In conversations with 1 person</td>
<td>86%</td>
<td>58%</td>
<td>28%</td>
</tr>
<tr>
<td>When riding in a car</td>
<td>74%</td>
<td>48%</td>
<td>26%</td>
</tr>
<tr>
<td>In a classroom (as observer or student)</td>
<td>66%</td>
<td>40%</td>
<td>26%</td>
</tr>
<tr>
<td>During leisure activities</td>
<td>77%</td>
<td>52%</td>
<td>25%</td>
</tr>
<tr>
<td>When talking on a cell phone</td>
<td>73%</td>
<td>51%</td>
<td>22%</td>
</tr>
<tr>
<td>When listening to music</td>
<td>78%</td>
<td>57%</td>
<td>21%</td>
</tr>
<tr>
<td>At a movie theater</td>
<td>71%</td>
<td>51%</td>
<td>20%</td>
</tr>
<tr>
<td>When talking on a traditional telephone</td>
<td>69%</td>
<td>50%</td>
<td>19%</td>
</tr>
<tr>
<td>When trying to follow conversations in noise</td>
<td>68%</td>
<td>27%</td>
<td>41%</td>
</tr>
</tbody>
</table>

Biggest difference: In a larger lecture hall
Smallest difference: Outdoors

Most hearing aid users wear aids when using the phone

Wear HA when placing or receiving calls?
(Own HA and cell phone (n=811))
Hearing aid users experience some difficulties with the phone

How often experience problems when using cell phone with HA
(Wear HA when using cell phone (n=660))

- Interfering noise (buzzing sound, etc.):
  - Regularly: 22%
  - Occasionally: 34%
  - Rarely: 40%
  - Never: 4%

- Other person's speech is not loud enough:
  - Regularly: 27%
  - Occasionally: 29%
  - Rarely: 34%
  - Never: 9%

- Other person's speech is not clear enough:
  - Regularly: 26%
  - Occasionally: 24%
  - Rarely: 26%
  - Never: 20%

Hearing aid users note many benefits

Observed Changes Attributed to Hearing Aids
(Current Owners who got HA(s) in last 5 years (n=702))

- Overall ability to communicate effectively:
  - 1 A Lot Worse: 15%
  - 2: 44%
  - 3 The Same: 28%
  - 4: 13%
  - 5 A Lot Better: 10%

- Willingness to talk and engage in conversation:
  - 1 A Lot Worse: 16%
  - 2: 44%
  - 3 The Same: 28%
  - 4: 12%
  - 5 A Lot Better: 10%

- Work performance:
  - 1 A Lot Worse: 16%
  - 2: 44%
  - 3 The Same: 28%
  - 4: 12%
  - 5 A Lot Better: 10%

- Relationships at home:
  - 1 A Lot Worse: 16%
  - 2: 44%
  - 3 The Same: 28%
  - 4: 12%
  - 5 A Lot Better: 10%

- Feeling included:
  - 1 A Lot Worse: 16%
  - 2: 44%
  - 3 The Same: 28%
  - 4: 12%
  - 5 A Lot Better: 10%

- Confidence in yourself:
  - 1 A Lot Worse: 16%
  - 2: 44%
  - 3 The Same: 28%
  - 4: 12%
  - 5 A Lot Better: 10%

- Feelings about yourself:
  - 1 A Lot Worse: 16%
  - 2: 44%
  - 3 The Same: 28%
  - 4: 12%
  - 5 A Lot Better: 10%

- Sense of humor:
  - 1 A Lot Worse: 16%
  - 2: 44%
  - 3 The Same: 28%
  - 4: 12%
  - 5 A Lot Better: 10%

- Physical health:
  - 1 A Lot Worse: 16%
  - 2: 44%
  - 3 The Same: 28%
  - 4: 12%
  - 5 A Lot Better: 10%
Hearing aids aren’t generally embarrassing

**How often feel rejected or made fun of because…**

- **… of hearing difficulty**
  - Non-Owners in bottom-50% loss segments (n=1259)
  - Non-Owners in top-50% loss segments (n=904)
- **… wearing HA**
  - HA Owners (n=969)

- Regularly: 38% (non-owners), 38% (HA owners)
- Occasionally: 27% (non-owners), 27% (HA owners)
- Rarely: 27% (non-owners), 27% (HA owners)
- Never: 11% (non-owners), 15% (HA owners)

More hearing loss, more feelings of rejection

**How often feel embarrassed because…**

- **… of hearing difficulty**
  - Non-Owners in bottom-50% loss segments (n=1259)
  - Non-Owners in top-50% loss segments (n=904)
- **… wearing HA**
  - HA Owners (n=969)

- Regularly: 29% (non-owners), 14% (HA owners)
- Occasionally: 36% (non-owners), 12% (HA owners)
- Rarely: 43% (non-owners), 70% (HA owners)
- Never: 20% (non-owners), 10% (HA owners)

More hearing loss, more feelings of embarrassment
Summary of Communication Benefits

- Most people who wear hearing aids don’t report their hearing aids
  - Don’t make them feel embarrassed
  - Don’t make them feel rejected

- Compared to their peers without hearing aids, more hearing aid users are satisfied
  - Following a conversation in noise
  - Following conversations in groups

- Hearing aid users report that hearing aids help
  - Communicated effectively
  - Engage in conversations
  - Help at work

Mental Health Benefits
Hearing aid use lowers the risk of depression

Non-Owners in Top-50% Loss Group (n=513 adults)

Hearing Aid Owners (n=656 adults)

Hearing aids improve quality of life

Quality of Life Improvement from Hearing Aids Over Time (Current Owners who got HA in last 5 years)

MT9 (n=765)
MT10 (n=702)
More hearing aid owners report regular increased QoL than PSAP owners

How Often Quality of Life is Improved by HAs (Got HA in last 5 years)

- Never: 10%
- Rarely: 32%
- Occasionally: 40%
- Regularly: 18%

87% “hearing aids help quality of life at least occasionally” 84%

How Often Quality of Life is Improved by PSAPs (Got PSAP in last 5 years)

- Never: 12%
- Rarely: 14%
- Occasionally: 0%
- Regularly: 74%

Summary of Mental Health Benefits

- Depression
  - Risk of depression is lower for people with hearing aids than without

- Quality of life
  - Most people (more than 80%) report the hearing aids regularly or occasionally improve their quality of life
  - More hearing aid users (55%) than PSAP users (40%) report their devices regularly improve their quality of life
What’s going well?

- Satisfaction rates are relatively high (>80%)
  - Driven by sound quality and effective professionals
  - Influenced by hearing aid age, price, and features
    - Directional microphones, telecoils, streaming
- Evidence of hearing aid benefits
  - Reduced risk of depression
  - Increased reported quality of life
  - Enhanced communication in important listening situations
- Feelings of hearing aid stigma are rare

What can we do better?

- Now’s your opportunity to brainstorm with me things we can do individually or as a field to address some of these limitations
What can we do better?

- Many patients are unaware of their features
- Many patients have not yet used their wireless features
  - Counseling
    - See for example: Desjardins & Doherty (2009)
  - Patient-friendly brochures
    - See for example: Caposecco et al (2016)

What can we do better?

- Some external accessories not (yet) related to satisfaction (e.g., companion microphone, television streamer)
  - Might naturally change
  - Patient-centered training
  - Gain settings
    - See for example: Leavitt (2018)
What can we do better?

- Satisfaction with cost (and to a lesser extent value) is relatively low (63% Top 3 Box)
  - Strive to offer cost-effective services
- Satisfaction with listening to loud sounds is relatively low (61% Top 3 Box)
  - Setting and verification/validation of MPO
- Satisfaction with background noise is relatively low (70% Top 3 Box)
  - Feature-specific training
  - Feature individualization
  - Technological innovation

What can we do better?

- Satisfaction rates are low (69%) for talking on the telephone
  - Many hearing aid users are already using their hearing aids
  - Most report the volume is too low or the voice over the phone isn’t clear
- Difference between hearing aid users and non-users is small for satisfaction with telephones
  - Carefully consider telephone options for individual patients
    - Adequate gain?
    - Patient training?
    - Best streaming (telecoil, Bluetooth, etc)?