

MarkeTrak VIII

Mini-BTEs tap new market, users more satisfied

By Sergei Kochkin, PhD



This is the third of a four-part installment on consumer perceptions of hearing aid satisfaction and benefit.

Part I evaluated detailed historical consumer satisfaction with hearing aids.¹

Part II studied the relationship between best practices in fitting hearing aids and outcomes.²

Part III looks at the impact that mini-BTE hearing aids have had on the consumer with a hearing impairment.

Part IV will evaluate consumer perceptions of benefit specifically experienced through wearing hearing aids.

Behind-the-ear (BTE) hearing aids represented less than 20% of hearing aid sales prior to 2000 and appeared to be on the decline as a style of hearing aid choice by consumers. With the introduction of open-fit hearing aids and receiver-in-the-canal (RIC) hearing aids however, BTEs now represent 63% of all hearing aid sales.³

In looking at the resurgence of BTE hearing aids, we wanted to answer two key questions:

- Did mini-BTE hearing aids result in market expansion?
- Do mini-BTEs improve the consumer's experience with hearing aids?

In our MarkeTrak survey, the generic term "mini-BTE" was used to represent both open-fit and RIC hearing aids, as well as on-the-ear (OTE) hearing aids. We did not ask the consumers to identify which of the two mini-BTE style hearing aids were in their ears, since we did not believe this was a distinction that they could accurately make.

METHOD

The detailed methodology of the MarkeTrak VIII survey is documented in the first publication in this series.⁴

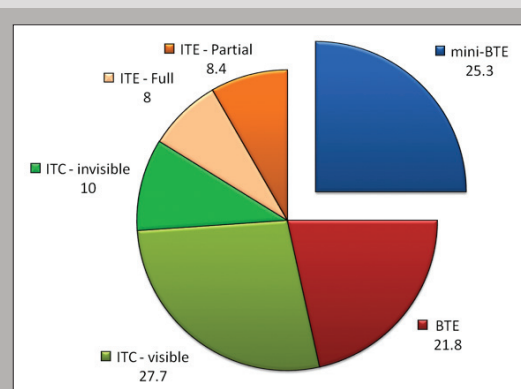


Figure 1. Hearing aid style mix (%) for the period 2005-2008.

Table 1. Hearing aid owner demography and hearing loss characteristics comparing mini-BTE and traditional hearing aid styles.

Sample Demography	Mini-BTE	Traditional Style	Significance Difference
Sample	(n=487)	(n=1,449)	
Age			
Mean	71	72	n.s.
Median	72	75	
Gender - male (%)	64	58	p<.01
Household Income (\$000)			
Mean	70	55	p<.0001
Median	63	41	
Marital Status (%)			
Now married	72	61	p<.0001
Never married	4	8	
Divorced	24	31	
Adult Employment (%)			
Full time	27	18	p<.0001
Part time	11	8	
Retired	59	66	
Not employed	3	8	
Adult Education (%)			
LT High School	6	7	p<.0001
Some or HS graduate	41	44	
Some or college graduate	53	49	
Hearing Loss Characteristics			
Hearing loss decile			
Mean	6.4	7.2	p<.0001
Median	7	8	
Mode	8	10	
Bilateral loss (%)	92	88	p<.02
Subjective hearing loss (%)			
Mild	12	6	p<.0001
Moderate	64	51	
Severe	22	39	
Profound	2	4	
Gallaudet Score (%)			
Hear whisper across room	8	6	p<.0001
Hear normal voice across room	41	28	
Hear shouts across room	43	49	
Hearing loud sounds better ear	5	9	
Tell speech from other sounds or worse	3	8	
Difficulty Hearing in Noise (%)			
Extremely difficult	23	38	p<.0001
Quite difficult	34	30	
Somewhat difficult	33	23	
Slightly difficult	9	8	
Not at all difficult	1	1	
Binaural (%)	84	77	p<.003
New User %	59	41	p<.0001

Table 2. Detailed customer satisfaction ratings (%), comparing mini-BTEs with traditional style hearing aids.

Factor	Mini-BTE	Traditional Style	Difference	Significance controlling for degree of hearing loss*
Overall Satisfaction				
Overall satisfaction	85	76	9	p<.001
Benefit	91	85	6	n.s.
Value	70	64	6	n.s.
Product Features				
Ease/battery change	93	87	6	p<.0001
Fit/comfort	87	86	1	n.s.
Ease of insertion/removal from ear	89	83	6	p<.01
Reliability	84	79	5	p<.01
Visibility	88	75	13	p<.0001
Length of trial period	84	75	9	p<.01
Frequency of cleaning	82	75	7	p<.01
Battery life	74	72	2	n.s.
Warranty	76	66	10	p<.0001
On-going expense	73	64	9	p<.01
Ease/volume adjustment	51	63	-12	p<.01
Sound Quality/Signal Processing				
Clearness tone/sound	85	75	10	p<.001
Sound of voice	82	71	11	p<.0001
Natural sounding	79	69	10	p<.0001
Directionality	79	69	10	p<.0001
Able to hear soft sounds	77	67	10	p<.01
Whistling/feedback/buzzing	78	67	11	p<.0001
Richness of sound/fidelity	77	66	11	p<.0001
Comfort with loud sounds	76	65	11	p<.0001
Chewing/swallowing sound	74	61	13	p<.0001
Use in noisy situations	70	58	12	p<.0001
Wind noise	66	56	10	p<.0001
Behavioral (%)				
Hearing aids in the drawer	5.8	6.1	-0.3	p<.01
Would recommend hearing aids to friends	85	82	3	n.s.
Would recommend the dispenser to friends	81	73	8	p<.01
Would repurchase hearing aid brand	53	46	7	p<.0001

* Significance testing based on least square means controlling for degree of hearing loss using analysis of covariance.

In evaluating customer satisfaction with hearing aids, this paper will focus on hearing aids four years of age or less.

In January 2009, we sent an extensive, seven-page, legal-size survey to the total universe of hearing aid owners identified (n=3789) during the screening phase; 3,174 surveys were returned, representing an 84% response rate.

The consumers were asked to rate their hearing aid experience on 44 items, using a 7-point Likert scale: very dissatisfied, dissatisfied, somewhat dissatisfied, neutral, somewhat satisfied, satisfied, and very satisfied.

The attitude items covered overall satisfaction, product features, product performance, and satisfaction in 19

listening situations. In addition, consumers were asked if they would recommend hearing aids to their friends, how many hours a day they wear their hearing aids, and whether or not they would repurchase their current brand of hearing aid.

RESULTS

Hearing aid sample

As shown in Figure 1, a query of the MarkeTrak VIII database yielded 487 mini-BTE hearing aid users (25.3% of all hearing aid users) and 1,449 users of traditional hearing aids: 21.8%

BTE, 27.7% in-the-canal (ITC) visible, 10% ITC invisible, 8% in-the-ear (ITE) full concha, and 8.4% ITE partial concha. All purchases were for the years 2005-2008.

In Table 1, the demography and hearing loss characteristics of the people using mini-BTE and traditional hearing aids is shown. From this table we can conclude the following:

- There are no age differences between the two samples.
- Mini-BTE hearing aids appeal more to males than traditional style hearing aids (64% vs. 58%).
- Mini-BTE hearing aid users on average earn \$15,000 more per year.
- Mini-BTE hearing aid users are more likely to be married (72% vs. 61%).
- Mini-BTE hearing aid users are more likely to be in the work force (38% vs. 26%).
- Mini-BTE hearing aid users have a less severe hearing loss and less difficulty hearing in noise.
- Mini-BTE users are more likely to purchase binaural hearing aids and more likely to have a bilateral loss.
- There is a greater incidence of new users of mini-BTE hearing aids than new users of traditional hearing aid styles (59% vs. 41%).

Customer satisfaction differences

The key finding from the analysis is that mini-BTE hearing aids are tapping an entirely new hearing aid user segment, not

a younger segment, but one who is more affluent, in a marital relationship, and in the workforce. More importantly, their hearing loss is significantly lower than that of the traditional hearing aid user.

As a result of this finding, we compared satisfaction ratings with hearing aids, controlling for degree of hearing loss. Customer satisfaction ratings for mini-BTE hearing aid users and users of traditional style hearing aids are reported in Table 2; least squares means from analysis of covariance is used to determine if the differences are significant at the $p < .01$ level or better.

Overall satisfaction ratings are significantly higher for mini-BTE hearing aids (85% vs. 76%); however there are no significant differences in perceptions of benefit or value, despite the fact that mini-BTE hearing aid prices are considerably higher than those of traditional hearing aids.

Focusing on product-specific satisfaction rating differences of 10 percentage points or more, mini-BTE hearing aids are shown to be superior in visibility (88% vs. 75%) and warranty (76% vs. 66%). However, mini-BTE hearing aids are rated lower in ability to adjust volume (51% vs. 63%).

With respect to sound quality and signal processing, mini-BTE hearing aids are rated between 10%-13% points higher than traditional style hearing aids on all 11 variables measured in this category.

Mini-BTE hearing aids do not appear to have a practical impact on reducing the number of hearing aids that aren't

Table 3. Customer satisfaction ratings (%) with hearing aid utility in 19 listening situations, comparing OTE and traditional style hearing aids.

Factor	Mini-BTE	Traditional Style	Difference	Significant difference controlling for hearing loss*
Listening Situations				
One-on-one	93	90	3	n.s.
Small groups	89	84	5	n.s.
T.V.	84	80	4	n.s.
Outdoors	84	77	7	$p < .001$
Listening to music	82	78	4	n.s.
Leisure activities	82	76	6	n.s.
While shopping	82	76	6	n.s.
Car	83	75	8	n.s.
Place of worship	78	73	5	n.s.
Restaurant	83	73	10	n.s.
Telephone	83	70	13	$p < .0001$
Concert/Movie	78	70	8	$p < .01$
Cell phone	80	65	15	$p < .0001$
Recreation and exercise	72	67	5	n.s.
Large group	76	66	10	$p < .01$
At sports events	72	64	8	n.s.
Workplace	70	64	6	n.s.
School/classroom	68	57	11	$p < .01$
While in bed	57	52	5	n.s.

* Significance testing based in least square means controlling for degree of hearing loss using analysis of covariance.

worn or on the consumer's likelihood of recommending hearing aids or the dispenser, or in establishing brand loyalty.

Of the 19 listening situations measured (Table 3), four show significant improvements in consumer satisfaction correlated with mini-BTE hearing aid usage: performance on cell phones (80% vs. 65%) and telephones (83% vs. 70%), in large group situations (76% vs. 66%) and in the schoolroom/classroom (68% vs. 57%).

DISCUSSION

So what's the consumer appeal for mini-BTE hearing aids? In a 2006 Internet survey^{5,6} of 232 users of mini-BTE hearing aids users (completed by their hearing healthcare provider), it was concluded that:

- Mini-BTE hearing aids were expansionary (68% new users) in that 22% of mini-BTE purchasers would have purchased no hearing aid in the absence of mini-BTE hearing aids, and were on average 9 years younger.
- The top reasons for mini-BTE appeal in rank order were: less occlusion, fit and comfort, better sound quality, better benefit, less visibility, and better directionality.
- Least important factors were: instant fit, less returns, no need for ear impression, more colors, and greater power.

The general consensus among experts⁷⁻¹¹ on the appeal of mini-BTE hearing aids (open-fit and RIC) is as follows:

- It's nearly invisible due to the use of thin-tubes.
- Occlusion is reduced; therefore there is a reduction in the aversion of the sound of chewing, swallowing, and the sound of the consumer's voice.
- They are more natural sounding and overall sound quality is better.
- Feedback is reduced, especially for RIC hearing aids.
- There is also a debate as to whether the open fit hearing aids obviate the impact of directional microphones.

CONCLUSIONS

Based on consumer data we can conclude the following:

- Mini-BTE hearing aids did not tap into younger segments of people with hearing loss.
- Mini-BTE hearing aids are expansionary and did influence more affluent and more active elderly consumer segments to come forward for a solution for their hearing loss; they also tapped into segments of people with milder hearing losses.
- Controlling for degree of hearing loss, mini-BTE hearing aids would appear to offer significant improvements in overall satisfaction, cosmetics, sound quality in all areas, and multiple environmental listening utility.
- Mini-BTE hearing aids did not improve consumer perceptions of fit and comfort, benefit, value, or impact reductions of hearing aids not being worn; nor did they generate more positive word-of-mouth advertising or develop greater hearing aid brand loyalty.

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