

Reactions to the Diagnosis of a Progressive Hearing Loss in Adults

Katrina J. Light and Valerie Looi
University of Canterbury

The purpose of this study was firstly to elucidate the common emotional reactions to the diagnosis of hearing loss (HL) in adults, and secondly to evaluate current audiological counselling services and ascertain their impact on patients' decisions to get hearing aids. Twenty-seven adults who had been newly-diagnosed with HL completed 2 questionnaires and an interview. The common emotions reported were a sense of loss, sadness, and resignation, as well as relief. The ratings of the audiological counselling services were positive and did not seem to significantly influence the individual's decision on whether to purchase hearing aids or not.

When an individual is given the diagnosis that they have a disability, such as a hearing loss (HL), there is likely to be a change in their emotional state. However there is a paucity of studies specifically investigating emotional reactions immediately following the diagnosis of an HL. Experienced audiologists may be aware of some of the common responses, however other responses may be less overt. For example, some of these may not arise till later, or some patients may have other issues that they are simultaneously dealing with which adds to their stress and/or emotional reaction(s). Further, some emotions may not be visible from outward appearance, or may be well masked by the patient. Knowing the common reactions that occur following the diagnosis of an HL would aid audiologists when counselling the patient (i.e., what are their support needs at this

Katrina J. Light and Valerie Looi, Department of Communication Disorders, University of Canterbury.

Valerie Looi is now at Cochlear-Asia Pacific, Macquarie University, New South Wales, Australia.

Correspondence concerning this article should be addressed to Katrina Light, Department of Communication Disorders, University of Canterbury, Private Bag 4800, Christchurch 8140, New Zealand. Telephone: +64 3 364 2408. Fax: +64 3 364 2760. E-mail: katrina.light@canterbury.ac.nz

time), and better enable them to recommend appropriate rehabilitation strategies. Furthermore, the individual's immediate response may affect their receptiveness to other information provided. The first aim of this study was to identify some of the common emotional reactions that occur following a first-time diagnosis of HL in adults.

There is just one published study that has reported on adults' immediate responses to the diagnosis of acquired HL (Martin, Krall, & O'Neal, 1989). In this study, a questionnaire was sent to 500 individuals (of which 276 responded) in a self-help group for hard-of-hearing people, inquiring about the initial impact of the diagnosis of acquired HL. The emotions reported included sadness, worry, fear, disappointment, anger, surprise, and shock (Martin et al., 1989). It is not clear from Martin et al.'s (1989) article how much time had elapsed from when the individual received the diagnosis to when they filled in the questionnaire. It is possible that a delay in time may have affected the participants' recall of the emotions experienced post diagnosis.

While there appear to be no other studies that have investigated initial emotional reactions to HL, there are a number of publications of a commentary nature which have discussed HL and the associated emotional impact (e.g., Barlow, Turner, Hammond, & Gailey, 2007; Crowe, 1997; English, 2008; Luterman, 2006). Commonly mentioned emotions include feelings of loss, anger, frustration, depression, a loss of confidence, anxiety, confusion, vulnerability, bewilderment, denial, a loss of identity, and reduced self-worth. However there is also the potential for an individual to have a positive reaction to the diagnosis. For example, some individuals may attend the audiological assessment because they suspect they have an HL and confirmation of this could be a comfort, providing a sense of relief. As each individual has a different social and lifestyle milieu, as well as a unique personality, it would be expected that a range of emotional reactions of differing intensities would be observed in a group of individuals who have just been diagnosed with an HL.

Typically the measures that have been used to assess reaction to a diagnosis do so from a pathological perspective, suggesting that the individual is emotionally disturbed rather than just emotionally upset. Examples of these measures include the Geriatric Depression Scale or the State-Trait Anxiety Inventory. However the emotional reactions to an HL are typically non-pathological, but no such measure of subclinical emotive reactions exists to assess this. The questionnaires which were used to assess response to the diagnosis of dementia (Carpenter et al., 2008) and cervical pathology (MacLeod & Hagan, 1992) comprised of anxiety and depression-related items. Bowman (2001) argued against this tendency to interpret an individual's response from a psychopathological perspective and purported that emotional reactions to health-related conditions are generally normal. Concordantly, within the field of audiology, Vargo and McFarlane (1994) and Martin, George, O'Neal, and Daly (1987) found that the majority of audiology patients

and the parents of paediatric patients experience a relatively normal reaction to the diagnosis of HL; the emotions are not severe enough in magnitude and duration to meet psychiatric criteria and as such are subclinical. Therefore, terms such as *anxiety* and *depression* should be avoided and instead terms which more accurately define the emotions expressed by the patients, such as sadness, fear, and hopelessness, may be more appropriate. A measure which assesses subclinical emotive reactions to the diagnosis of HL does not currently exist, and therefore one was developed for this study based on the emotions that have been reported to be associated with HL (Barlow et al., 2007; Luterman, 2006; Martin et al., 1989).

An awareness of these emotional reactions will aid audiologists in counselling their patients. Counselling occurs at the time of the diagnosis and throughout the aural rehabilitation process. As stated in the practice guidelines of the largest governing body for audiologists, counselling is an integral component of audiological care (American Speech-Language-Hearing Association, 2006). However, counselling tuition is not currently provided for audiology students at New Zealand universities and there are few professional development courses for practicing audiologists. In New Zealand, the training to be an audiologist is a two year Masters degree. While this training goes some way to equipping an audiologist for informational counselling, there is no training into affective (or personal-adjustment) counselling. Informational counselling relates to providing information regarding the HL, its consequences, and alternative rehabilitative options (Laplante-Levesque, Pichora-Fuller, & Gagné, 2006; Taylor, 1993), while affective counselling relates to assisting the patient to accept their HL and cope with the difficulties (Laplante-Levesque et al., 2006; Taylor, 1993). The establishment of a training workshop in audiological affective counselling is warranted in New Zealand. Prior to doing so, it was deemed necessary to evaluate current audiological counselling services and ascertain the impact of counselling on patients' decisions to get hearing aids (HAs); this was the second aim of this study.

While a number of books have been written about audiological counselling, there appears to be only one study that has quantitatively measured the efficacy of audiological counselling. Taylor (1993) used the Audiologist Counseling Effectiveness Scale (ACES), which required the patient to evaluate the audiologist's use of both emotional and informational counselling. This instrument aimed to elucidate whether the patient was satisfied with their care and if the audiologist was providing the appropriate support. This measure was psychometrically validated on a sample of patients with presbycusis who were being treated by an audiologist who knew the content of the instrument (Taylor, 1993). No other published study has used this measure. Another measure has also been developed which assesses the competency of the audiologist with respect to counselling, but this tool is completed by an instructor of an audiological counselling course. This measure is called the Audiologic Counseling Evaluation (ACE) and was origi-

nally developed for training new audiologists at informing parents about their baby or child's HL (English, Naeve-Velguth, Rall, Uyehara-Isono, & Pittman, 2007). The questions from the ACES and ACE form the basis of the interview and the questionnaires developed for the current study.

In summary, the first aim of this study was to identify some of the common emotional reactions that occur following a first-time diagnosis of HL in adults. The second aim of this study was to investigate current audiological counselling services and examine the impact on patients' decisions to get HAs. To accomplish these aims, adults who had been newly-diagnosed with an HL completed an initial reaction questionnaire, partook in a follow-up interview, and subsequently completed a second questionnaire at least 3 weeks later. There were two versions of the second questionnaire, depending on whether they had chosen to have HA(s) fitted or not.

METHOD

Participants

The participants in this study were adults who had been diagnosed for the first time with an HL, recruited from 16 private audiology clinics around New Zealand over a 6 month period. Individuals had to be 18 years of age or older; not have had their hearing thresholds tested previously where they were diagnosed with an HL; have a progressive or gradual HL which had not arisen from a single incident in the last month (e.g., head trauma); have a four-frequency (0.5, 1, 2, and 4kHz) pure tone average (PTA) ≥ 30 dB HL in either or both ears; use spoken English as their main form of communication; and, have no other major impairment that would prevent them from completing a questionnaire (e.g., blindness or significant cognitive impairment). This study received ethical approval from the University of Canterbury Ethics Committee and from the New Zealand Health and Disability Upper South B Ethics Committee.

Procedure

Individuals who met the inclusion criteria and were newly-diagnosed with an HL at their appointment were invited by the audiologist to be involved in the study. Initially it was proposed that the receptionist would inform the patient about the study to keep the audiologists "blind" to which patients agreed to be involved. However, the clinic managers did not agree with this, as they felt that it increased the workload for the already-busy receptionists. Furthermore, the ethics committee also stipulated that the audiologists, and not the receptionists, had to approach the patients. Hence, each potential participant was given an invitation letter with an accompanying information sheet and consent form by their audiologist. There was the option for patients to take the information sheet home to read in their own time, but they were asked to provide their contact details so

that the researcher could contact them.

All patients who were considering being involved, or had consented to be involved, were given the Initial Questionnaire (Appendix A) and asked to complete it as soon as possible, and within 24 hr of the appointment. The first part of this questionnaire asked about the emotions the individual experienced when he/she was told they had an HL. The list of emotions was based on research and commentary articles pertaining to the emotional impact of HL (Barlow et al., 2007; Luterman, 2006; Martin et al., 1989), as well as the clinical experience of this study's researchers and other clinicians. The second section of the questionnaire asked about the audiologist's approach, with questions from the ACES (Taylor, 1993) and the ACE (English et al., 2007).

The researcher contacted the patient within 48 hr of their appointment with regard to their participation and/or to organise an interview time. The interview was conducted at the patient's home, the university clinic, or if the other options were not possible, via phone. If the interview was conducted face-to-face, the completed Initial Questionnaire was collected from the participant at the interview. If the interview was undertaken via phone, the participant was provided with a stamped addressed envelope to return the completed questionnaire.

The aim of the interview was to corroborate the responses on the Initial Questionnaire and to obtain more detailed information. The interview was done within 5-7 days of the appointment and took approximately 30 min. There were five sections to the interview; section two relates directly to this paper. Section two asked about the hearing test, including the emotions felt immediately after being told their hearing test results; how/if their emotions had since changed; what could have been improved in the appointment; and if they became distressed, what the audiologist's reaction was and/or if it could have been improved. These questions are listed in Appendix B. The remaining sections of the interview do not relate directly to the aims of this paper and therefore will not be further addressed.

Individuals who decided to have an HA fitted were sent the HA Follow-Up Questionnaire (Appendix C) in the week following their HA fitting. They were asked to complete this within 24 hr of being fitted to minimise any bias of HA efficacy on the individual's responses. The first part of this questionnaire contained questions similar to those in the Initial Questionnaire regarding the audiologist's approach. The study was not intended to determine if the audiologists effectively sold the idea of HAs, but participants were asked if there was anything that the audiologist said that influenced their decision to have or not have HA(s). A few questions were added covering the HA fitting process (Questions 2, 6, 10, 13-16, 19-21). The remainder of the questionnaire asked about what was appreciated and what could have been improved in the service they received, and whether the participant felt that they had enough knowledge about their HL and HA(s). The participants were provided with a stamped addressed envelope to return the

questionnaire.

Individuals who chose not to have an HA fitted were asked to fill in a different questionnaire – the Non-Hearing Aid Follow-Up Questionnaire, with a time delay after the first questionnaire which was similar to that of the participants fitted with an HA (i.e., approximately 3 weeks). This questionnaire enquired about their reasons for not getting an HA, their use of other assistive listening devices and/or aural rehabilitation programs, who they had told about their HL and these other peoples' responses, and what their expectations were regarding their hearing in the future. As this data is not directly related to the aims of this paper, it is not presented here.

Statistical Methods

For the questions using a 5-point Likert-response scale (41 in the Initial Questionnaire; 22 in the Follow-Up Questionnaire), the response categories were numerically coded as follows: 0 = *no change*, +1 = *increased slightly*, +2 = *increased greatly*, -1 = *reduced slightly*, -2 = *reduced greatly*. Six of the questions were negatively-phrased (e.g., "The audiologist seemed condescending"), and these were reversed scored for analysis (i.e., 0 = *do not agree*, -1 = *slightly agree*, -2 = *moderately agree*, -3 = *considerably agree*, -4 = *extremely agree*). The questionnaires were completed by the individual at home and so it was not possible to enforce that all questions were answered. As some questions were not answered by all individuals, the percentage of responses is based on the number of respondents for that question. All data were entered and analysed using The Statistical Package for the Social Sciences (SPSS) version 17.0. Two-tailed statistical tests with a significance value of $p \leq .05$ were used, and correlation analyses were performed using Spearman's rho calculations. The responses for open-ended questions were coded with respect to their theme.

For analyses where participants were sub-grouped according to patient characteristics, age was grouped as ≤ 65 years, 66-80 years, and > 80 years, based on common age group classifications used in existing studies on HL in the elderly (Greville, 2005). Level of HL was calculated as the average PTA of the individual's two ears (i.e., the PTA of the left ear was added to the PTA of the right ear with the total divided by two), and coded as: 0-20 dB HL = normal, 21-40 dB HL = mild, 41-55 dB HL = moderate, 56-70 = moderately-severe, 71-90 = severe, > 90 = profound. To examine the impact of the audiologist's counselling on the patient's decision to get HAs, a logistic regression analysis was undertaken with total score for audiological counselling as a potential predictor, and the decision to get or not get HAs as the dependent variable. Each participant's total score for audiological counselling was computed by summing their responses to Questions 21-44 on the Initial Questionnaire, including the reverse-coded negatively-phrased questions.

RESULTS

Sample Characteristics

Twenty-seven individuals, 11 males and 16 females, participated in the study. The mean age was 71.0 years (SD 9.6 years). There were 8 individuals aged ≤ 65 years, 16 aged 66-80, and 3 aged > 80 years; 59% of the sample was retired. The majority of the sample (70.3%) reported that their general health was good or very good. Seventeen participants (7 males and 10 females) chose to have HAs fitted, while the remainder of the sample chose not to get HAs and are subsequently referred to as the Non-Hearing Aid (NHA) group. There were 18 participants with a mild HL, 8 with a moderate loss, 1 with a moderately-severe loss, and 1 with a severe loss.

A t -test showed that the NHA group was significantly younger (65.7 years ± 9.6) than the HA group (74.2 years ± 8.4), $t(25)=2.4$, $p=.024$. A chi-squared test also showed that the NHA group had proportionately fewer individuals than the HA group who rated their general health as poor or satisfactory, $\chi^2(3)=9.44$, $p=.024$. There was no significant difference between the HA group and the NHA group with respect to gender, $\chi^2(1)=0.004$, $p=.952$; ethnicity, $\chi^2(3)=2.88$, $p=.411$; marital status, $\chi^2(2)=5.56$, $p=.062$; employment, $\chi^2(3)=3.42$, $p=.332$; or annual income, $\chi^2(4)=6.15$, $p=.188$. The mean PTA of the total sample was 39.6 dB HL (SD 10.8), and a t -test showed that the NHA group had significantly lower PTAs (32.8 dB HL ± 6.6) than the HA group (43.6 dB HL ± 10.9), $t(25)=2.8$, $p=.009$.

At the time of data analysis, 10 of the 17 individuals who had requested HAs had not yet received them because they were applying for funding¹ to subsidise the cost of the aids. These individuals are included in the HA group for these analyses because while they had not yet received the aids, they were in the process of getting them. However their data was not available for the analyses relating to the HA Follow-Up Questionnaire.

Emotional Reactions to the Diagnosis of HL

On the Initial Questionnaire, completed within 24 hr of the diagnosis, 14 participants reported that their results were what they expected, with a further 11 individuals reporting that the results were "partly" what they had expected. Despite this, the majority of participants reported that they still experienced a sense of loss when given the diagnosis of an HL. Furthermore, relief and sadness were ex-

¹In New Zealand, the Accident Compensation Corporation (ACC) provides funding towards HAs for individuals whose HL is due to noise exposure. In addition, the Enable scheme provides funding from the Ministry of Health for individuals who meet one or more of the following criteria: aged 21 years or younger, was born with a severe HL, has a Community Services card, experienced a sudden and severe HL (i.e., due to viral infection), and/or has a dual disability. Funding can take 9-12 months to be approved.

perienced by $\geq 50\%$ of participants. Data from the Initial Questionnaire are presented in Table 1. The last three columns of Table 1 show the number of individuals who experienced some level of the emotion (i.e., their response was something other than “not at all”), the number who did not experience the emotion, and the significant results from chi-square tests comparing the number of individuals for whom the emotion was present versus being absent. There were significantly more individuals who experienced some sense of loss than those who did not, and significantly more individuals who did not experience shock, disbelief, apathy, or hopelessness. Analysis of the presence/absence of the emotion in relation to level of HL found that “hopelessness” and “disbelief” occurred more often in patients with greater (than lesser) levels of HL, $\chi^2(3) = 16.09, p = .001$ and $\chi^2(3) = 8.76, p = .033$, respectively. No significant association was found between gender or age group and the presence/absence of an emotion.

A question in the Interview asked participants what initially led them to see an audiologist. The most common reason was that they thought they had an HL (44.4%, $n = 12$), followed by their partner telling them that they had an HL (18.5%, $n = 5$), or another family member telling them (7.4%, $n = 2$). Eight participants (29.6%) gave other reasons including a promotional offer for a free hearing test, and medical referrals.

Another question in the Initial Questionnaire asked “Compared to how you felt prior to the audiologist appointment, how did your level of the following emotions change?” Table 2 lists the emotions assessed, how the level of each changed, the number of individuals who experienced some change in the level of the emotion (i.e., their response was something other than “no change”), the number who did not experience a change, and the significant chi-square results comparing the number who experienced some change versus no change. There were significantly more individuals who reported that their level of optimism had changed (either increased or decreased) than those who reported no change, and significantly more individuals who reported that their level of embarrassment and guilt were unchanged.

The majority of participants (81%, $n = 21$) did not feel that their emotional response to the test results hindered their uptake of the information the audiologist told them. However, four individuals were somewhat affected and one individual reported that she was very much affected.

Participants were asked again at the interview, 5-7 days after the hearing test, “Which of the following emotions did you feel immediately after the audiologist told you your hearing test results?”, and “Has this emotion increased or decreased since then, or has there been no change?” As shown in Table 3, 70% of participants experienced resignation and a number of participants also experienced sadness, relief, and optimism. Table 3 also shows that the level of emotion changed in a small proportion of individuals in the week after the hearing test; more often it was a decrease in the emotion, rather than an increase.

Table 1
 Percentage of Individuals Who Experienced Each Emotion as a Result of Being Told That They Had a Hearing Loss,
 as Reported on the Initial Questionnaire Completed Within 24 hr of the Diagnosis

Emotion	N	% of participants that experienced this level of emotion				Number of participants who did vs. did not experience the emotion		$\chi^2(df = 1), p\text{-value}^a$
		Not at all	Some-what	Very much so	Emotion absent	Emotion present		
Sense of loss	25	28.0	8.0	8.0	7	18	4.8 ($p = .028$)	
Relief	24	45.8	16.7	8.3	11	13		
Sadness	26	50.0	30.8	3.8	13	13		
Surprise	25	68.0	12.0	4.0	17	8		
Shock	25	72.0	4.0	24.0	18	7	4.8 ($p = .028$)	
Disbelief	25	80.0	8.0		20	5	9.0 ($p = .003$)	
Apathy	23	82.6	8.7	8.7	19	4	9.7 ($p = .002$)	
Hopelessness	25	88.0	4.0	8.0	22	3	14.4 ($p < .001$)	
Anger	25	100.0			25	0		

^aThe 2 result is provided for emotions where there was a significant difference between the number of participants for whom that emotion was absent versus present.

Table 2
 Percentage of Individuals Whose Level of Emotion Changed
 as a Result of Being Told Their Hearing Test Results, as Reported on the Initial Questionnaire

Emotion	N	% of participants that experienced this change in the level of their emotion				Number of participants who did vs. did not experience a change in the level of emotion		$\chi^2(df = 1)$, p-value. ^a	
		Reduced greatly	Reduced slightly	No change	Increased slightly	Increased greatly	Change		No change
Optimism	25	8.0	36.0	24.0	20.0	12.0	19	6	6.80 (p = .009)
Anxiety	26	15.4	19.2	46.2	15.4	3.8	14	12	
Vulnerability	24	12.5	8.3	45.8	29.2	4.2	13	11	
Resignation	23	13.0	8.7	47.8	26.1	4.3	12	11	
Fear	25	24.0		64.0	12.0		9	16	
Embarrassment	24	8.3	8.3	70.8	12.5		7	17	4.20 (p = .041)
Guilt	24	20.8		79.2			5	19	8.17 (p = .004)

^aThe 2 result is provided for emotions where there was a significant difference between the number of participants whom experienced a change in the level of the emotion versus those where there was no change.

Table 3
Emotions Experienced in Response to the Hearing Test Results and How They Changed in the Week After the Hearing Test (*N* = 27)

Emotion	% who experienced the emotion	% of total sample who reported this change in emotion in the week post-hearing test			% who experienced the emotion or some change on the initial questionnaire ^a
		Decreased	No change	Increased	
Resignation ^b	70.4	7.4	88.9	3.7	52.2
Sadness	37.0	7.4	88.9	3.7	50.0
Relief	37.0	—	96.3	3.7	54.2
Optimism ^b	37.0	3.7	96.3	—	76.0
Sense of loss	25.9	—	96.3	3.7	72.0
Anxiety ^b	25.9	14.8	77.8	7.4	53.8
Surprise	22.2	7.4	92.6	—	32.0
Shock	11.1	11.1	85.2	3.7	28.0
Embarrassment ^b	7.4	—	100.0	—	29.2
Vulnerability ^b	18.5	3.7	96.3	—	54.2
Apathy	14.8	3.7	92.6	3.7	17.4
Disbelief	11.1	—	100.0	—	20.0
Fear ^b	3.7	—	100.0	—	36.0
Hopelessness	3.7	—	100.0	—	12.0
Anger	0.0	—	100.0	—	0.0
Guilt ^b	0.0	—	100.0	—	20.8

^aBased on the individual's report that they experienced some degree of the emotion (i.e., a response other than "not at all"). ^bThe question in the Initial Questionnaire asked "compared to how you felt prior to the audiologist appointment, how did your level of the following emotions change?"

The emotions addressed in the interview were the same emotions addressed in the Initial Questionnaire, and the percentage of individuals who reported on the Initial Questionnaire that they had experienced the emotion or some change in the level of the emotion is presented in the last column of Table 3. For the emotions marked with ^b, the Initial Questionnaire asked "How did your level of the following emotions change?" If an individual responded "no change," it was not possible to know whether the emotion was absent or present. Therefore, for these emotions, a comparison of the responses on the Initial Questionnaire with the responses from the interview was not possible. For the other emotions where the Initial Questionnaire asked "To what extent did you experience the emotion?", correlation analyses were undertaken between the level of emotion reported on

Table 4

Spearman's rho Correlation Analyses Between Emotional Response
Reported at the Interview and on the Initial Questionnaire

Emotion	Correlation coefficient	Significance (2-tailed)
Shock	.621	.001
Sadness	.545	.004
Relief	.300	.154
Sense of loss	.369	.069
Surprise	.570	.003
Disbelief	.249	.230
Hopelessness	-.075	.721
Apathy	.133	.546

Note. Bold indicates significant correlation. Correlation for "anger" could not be computed because one of the variables (absence of emotion at interview) equalled zero.

the Initial Questionnaire and presence/absence of the emotion as reported at the interview. There were three emotions, shock, sadness, and surprise, for which there was a significant correlation between the results on the Initial Questionnaire and the interview (see Table 4).

Evaluation of the Audiological Counselling

Table 5 shows that the ratings of the audiologists' counselling on the Initial Questionnaire were generally positive. For nearly all positively-phrased questions, significantly more participants responded in agreement than those who did not agree. For the negatively-phrased questions, the majority of individuals typically responded that they did not agree. The exception was for the question – "Insufficient time was given to explaining the results and implications," where there was no significant difference between the number of participants who agreed with the statement and the number who did not. Chi-square tests to ascertain if male and female participants differed in their ratings of the audiologist found that females, more often than males, felt the amount of information was overwhelming, $\chi^2(1) = 4.21, p = .040$.

In the interview, participants were asked how the audiologist could improve his/her approach. The majority of individuals had no suggestions, however four individuals suggested that more explanation was needed regarding the audiogram, what fricatives were, how HL could be helped, and providing the opportunity to ask questions. Twenty-two percent ($n = 6$) of participants reported that the consequences of HL were not addressed, and 51.9% ($n = 14$) of participants reported that how to communicate better or cope with the HL was not discussed. When asked if non-HA alternative options were discussed, all participants responded no. While most participants said nothing could have been improved, it

is interesting to note the large percentage of cases where pertinent topics were not addressed. Further, when questioned whether the audiologist asked them whether they understood before moving on to the next topic, 63% ($n=17$) of participants reported that the audiologist did ask, whereas the remaining 37% were not asked if they understood.

Two participants became distressed during the hearing test. For one participant, it was due to the masking noise making him feel dizzy, while for the other it was due to the audiologist's cellular phone ringing during the testing. Both participants reported that the audiologist could not have done anything to improve their reaction to the patient's distress.

At the interview, participants were asked if they intended to get an HA and if the audiologist had in any way influenced their decision. Eighty-two percent ($n=22$) reported that the audiologist had not influenced their decision, but five individuals felt that they were in some way influenced by what the audiologist said. What they quoted the audiologist as saying – that is, “a hearing aid would help,” “that I would benefit from one,” “that I would benefit from it and that two would be better than one” – were phrases commonly used by audiologists. A logistic regression analysis to identify the effect of an individual's rating of the audiologist's counselling on their decision to get HAs was not statistically significant, $\beta(1)=0.017$, Odds Ratio = 1.02, $p=.526$. The rating of the audiologist's counselling was based on scores from the Initial Questionnaire. Across the sample, the total rating scores varied between 10 and 68 (out of a maximum score of 72), and the mean score was 51.5 (± 15.8). The majority of individuals (81.4%, $n=22$) gave a total score between 41 and 62, and just five individuals gave the audiologist a score less than 40.

Individuals who purchased HAs also rated the audiologist's counselling at the HA fitting appointment using the HA Follow-Up Questionnaire. Table 6 shows that the ratings of the audiologists were positive. The majority of the chi-square tests could not be performed because all individuals reported that they agreed with the statement to some degree, or disagreed if the statement was negatively-phrased.

The remainder of the HA Follow-Up Questionnaire asked about the informational counselling that had been provided and how the audiologist could improve the service he/she provided at the HA fitting appointment. The majority of individuals were satisfied with the amount of information they received (85.7%) and felt they had enough knowledge to use their HAs (57.1%), while the remainder of the sample felt they had some knowledge. Two of the seven participants reported that they were hesitant or unclear about when to wear the HA(s). One participant recommended that patients be provided with a procedures checklist prior to the HA fitting in order to prepare them for what was going to happen. Finally, when asked what they appreciated in the service they received, the responses related to getting the HAs and having something to overcome their loss, as well as the manner of the audiologist, for example, genuine, friendly, and helpful.

Table 5
The Participants' Ratings of the Audiologist at the Hearing Test Appointment,
as Reported on the Initial Questionnaire

	N	% of participants who gave this rating					$\chi^2(df = 1)$, p-value
		Do not agree	Slightly agree	Moderately agree	Considerably agree	Extremely agree	
Provision of information							
The audiologist used language I understood	27	0.0	3.7	11.1	33.3	51.9	–
The information provided was relevant to my situation	26	7.7	3.8	15.4	11.5	61.5	18.6, p < .001
I was satisfied with the information provided	27	3.7	3.7	14.8	22.2	55.6	23.1, p < .001
I feel better informed about how to cope with my HL	26	11.5	3.8	23.1	23.1	38.5	15.4, p < .001
Questions were answered clearly and completely	26	0.0	3.8	11.5	26.9	57.7	–
Insufficient time was given to explaining the results and implications ^a	27	59.3	14.8	7.4	3.7	14.8	0.9, NS
The amount of information was overwhelming ^a	26	69.2	15.4	11.5	0.0	3.8	3.8, p = .050
Impact on individual's life							
Audiologist discussed how my HL would affect my life	23	34.8	13.0	13.0	13.0	26.1	2.1, NS
Audiologist dealt with the fears and concerns I had about my condition	22	13.6	13.6	0.0	18.2	54.5	11.6, p = .001
Audiologist seemed to understand my experience	27	0.0	7.4	14.8	22.2	55.6	–
Audiologist seemed to trivialise the issue of my HL ^a	26	88.5	3.8	3.8	0.0	3.8	15.4, p < .001

continued on next page

Table 5 continued from previous page

	N	% of participants who gave this rating					$\chi^2(df=1)$, p-value
		Do not agree	Slightly agree	Moderately agree	Considerably agree	Extremely agree	
Patient's self-expression							
I was able to express my feelings regarding the diagnosis	20	10.0	15.0	0.0	40.0	35.0	12.8, p < .001
I felt I could ask questions when I wanted to	27	0.0	11.1	7.4	37.0	44.4	–
Audiologist listened to me	27	0.0	3.7	7.4	37.0	51.9	–
I felt comfortable talking with my audiologist	26	0.0	0.0	15.4	15.4	69.2	–
Audiologist's actions							
Audiologist was supportive during the consultation	27	0.0	3.7	14.8	11.1	70.4	–
Audiologist was empathetic during the consultation	23	4.3	4.3	21.7	17.4	52.2	19.2, p < .001
Audiologist was patient with me	27	0.0	0.0	18.5	11.1	70.4	–
Audiologist went at a pace appropriate for me	26	3.8	0.0	15.4	19.2	61.5	22.2, p < .001
I felt I could trust the audiologist	27	7.4	11.1	3.7	22.2	55.6	19.6, p < .001
Would recommend this audiologist to a friend in a similar situation	26	0.0	3.8	7.7	15.4	73.1	–
Audiologist seemed condescending ^a	23	95.7	0.0	0.0	0.0	4.3	19.2, p < .001
Audiologist seemed aloof, detached, or irritable with me ^a	25	92.0	0.0	4.0	0.0	4.0	17.6, p < .001
Audiologist made me feel embarrassed about my condition ^a	26	92.3	0.0	0.0	0.0	7.7	18.6, p < .001

Note. HL = hearing loss. NS = Non-significant ($p > .05$). Bold indicates a significant difference between the number of individuals who agreed to some extent with the statement and the number who did not agree.
^aNegatively-phrased question.

Table 6
The Participants' Ratings of the Audiologist at the Hearing Aid Fitting Appointment

	N	% of participants who gave this rating					$\chi^2(df = 1)$, p-value
		Do not agree	Slightly agree	Moderately agree	Considerably agree	Extremely agree	
Provision of information							
Audiologist clearly indicated the purpose of the appointment	7	0.0	0.0	0.0	28.6	71.4	-
Audiologist clearly described the process of follow-up appointments	7	0.0	14.3	14.3	28.6	42.9	-
Audiologist made it clear when I should return for a follow-up appointment	7	0.0	0.0	0.0	28.6	71.4	-
Audiologist clearly explained the pros of hearing aid use	6	0.0	16.7	0.0	33.3	50.0	-
Audiologist clearly explained the cons of hearing aid use	5	0.0	20.0	40.0	20.0	20.0	-
I am satisfied with information I have about what kinds of improvements I can expect with my hearing aid(s)	7	0.0	14.3	14.3	42.9	28.6	-
Audiologist used language I understood	7	0.0	0.0	14.3	42.9	42.9	-
My questions were answered clearly and completely	7	0.0	0.0	14.3	14.3	71.4	-
There was insufficient time in the appointment to cover everything that I felt was necessary ^a	7	57.1	14.3	0.0	14.3	14.3	0.14, p = NS
Overwhelming amount of information ^a	7	28.6	42.9	0.0	14.3	14.3	1.29, p = NS

continued on next page

Table 6 continued from previous page

	N	% of participants who gave this rating					$\chi^2(df=1)$, p-value
		Do not agree	Slightly agree	Moderately agree	Considerably agree	Extremely agree	
Impact on individual's life							
Audiologist treated me as an individual	7	0.0	0.0	14.3	14.3	71.4	-
Patient's self-expression							
I felt I could ask questions when I wanted to	7	0.0	14.3	0.0	57.1	28.6	-
Audiologist listened to me	7	0.0	0.0	14.3	42.9	42.9	-
Audiologist's actions							
Audiologist was supportive during the consultation	7	0.0	0.0	14.3	28.6	57.1	-
Audiologist was empathetic during the consultation	6	0.0	16.7	0.0	50.0	33.3	-
Audiologist was sincere and gained my confidence	7	0.0	14.3	0.0	42.9	42.9	-
Audiologist was patient with me	7	0.0	14.3	0.0	28.6	57.1	-
Audiologist went at a pace appropriate for me	7	0.0	14.3	0.0	57.1	28.6	-
I felt I could trust the audiologist	7	0.0	14.3	0.0	42.9	42.9	-
I would go back to this audiologist	7	0.0	0.0	14.3	14.3	71.4	-
I would recommend this audiologist to a friend in a similar situation	7	0.0	0.0	14.3	14.3	71.4	-
Audiologist seemed aloof, detached, or irritable with me ^a	7	85.7	0.0	14.3	0.0	0.0	3.57, p = NS

Note. NS = Non-significant ($p > .05$).
^aNegatively-phrased.

DISCUSSION

In conjunction to diagnosing and treating HL, an audiologist's job involves teaching and counselling the patient. The counselling encompasses both informational and affective counselling, the latter of which can be alternatively described as providing emotional support (Luterman, 2006). If the audiologist fails to recognise and acknowledge key emotions, it may impede their ability to provide the best patient care (Luterman, 2006). The first aim of this study was to elucidate the common emotional reactions that occur following a first-time diagnosis of HL in adults, given the paucity of data in the audiology literature. Secondly, this study aimed to evaluate current audiological counselling practises amongst a small sample of New Zealand audiologists and examine the impact on patients' decisions to get HAs.

Common Emotional Reactions Following Diagnosis of an HL

The most common emotional reaction post-diagnosis was a sense of loss. This was followed by relief and sadness. The sadness and sense of loss experienced by these individuals may be due to having to confront the loss of their ability to hear, a skill often taken for granted. The other emotion which was experienced by almost half of the current sample was relief. HL is typically a hidden disability, whereby affected individuals usually prefer to keep the disability concealed (Robertson, 1999). Hence some individuals may have felt relieved at having an official diagnosis and/or not needing to hide their disability any longer. Some of the participants commented during the interview that they were glad that they now had someone who could help them.

The current study found no significant association between gender or age, and emotional response. In contrast, Martin et al. (1989) found that females tended to experience greater levels of shock, anger, sadness, fear, and worry than males, and that younger patients (16-39 years) experienced significantly more shock, fear, and surprise than older patients (40-89 years). The participants in Martin et al.'s (1989) study completed their questionnaire some time after their hearing test (it is not clear from the article how long after, but the authors refer to age differences in years), and the effect of time on the accuracy of recall is unknown. In contrast, participants in the current study completed their questionnaire within 24 hr of the hearing test. The current study found that individuals with a greater level of HL (i.e., moderately-severe to severe) were significantly more likely to experience disbelief and hopelessness than those with less HL. In Martin et al.'s (1989) study, individuals with a mild-to-moderate HL were significantly less likely to be fearful than those with a more severe HL.

Some of the participants felt that their emotional response to the hearing test results hindered their uptake of information given by the audiologist. Aminzadeh, Byszewski, Molnar, and Eisner (2007) reported that sometimes the emotional reaction to a diagnosis of dementia is so overwhelming that it precludes the

reception of other information provided by the clinician. The clinician should consider this in deciding whether to discuss HAs immediately post diagnosis or to leave the discussion for another appointment when the patient may be more receptive.

Participants were also asked during the interview what emotions they had experienced immediately after the audiologist told them their hearing test result. There were fewer participants at the interview, than on the Initial Questionnaire, that reported experiencing any emotion, possibly as a result of forgetting. There were two emotions, however, that were reported more often at the interview than on the Initial Questionnaire: resignation and vulnerability. These emotions may have arisen in the week between the hearing test and the interview, but the patients presumed that they had experienced these from the initial diagnosis. Participants were also asked if the level of emotion had changed in the week after the hearing test. For the majority of participants there was no change, although when the level had changed, it was more often a decrease than an increase. There are no other published studies which have investigated changes in emotion in the week post HL diagnosis.

Evaluation of Audiological Counselling Services

Participants were asked to rate the audiologist's approach at the hearing test appointment. Although ratings of the audiologists were generally positive, some participants felt that more time could have been given to explaining the hearing test results and their implications, and that the audiologist could have discussed how the HL would affect the individual's life. This implies that audiologists may need to spend more time explaining the hearing test results within the context of the individual's life, from both an informational and affective counselling standpoint. Generally there were no differences between male and female participants in their ratings of the audiologist, except that significantly more females than males found the amount of information overwhelming. Previously, Martin et al. (1989) found that men were generally more satisfied with the counselling than women.

The ratings of the audiologist's counselling at the HA fitting appointment were also generally positive. However caution is required when interpreting these findings given that just seven individuals completed the questionnaire. Participants commented that they appreciated the friendly and helpful nature of the audiologist, as well as the availability of someone to help them overcome their HL.

In comparing the results from the current study to other similar studies, it is noted that the deficiencies previously reported in the audiologist's approach are not complaints of the current sample. For example, Martin et al. (1989) also analysed adults with acquired HL and found that of the participants diagnosed by an audiologist, only 39% felt that their audiologist considered their feelings. Although this question was not specifically asked in the current study, the ratings of

the audiologist's empathy and supportiveness were generally positive in this sample. Martin et al. (1989) also found that half of the audiologists did not describe the information in a manner understandable to the patient. Similarly, Sweetow and Barrager (1980) surveyed parents' perspectives of the audiologist's competency at counselling and found that while the parents were happy with the service, they found a weakness in the audiologist's ability to describe the HL in non-technical terms. In contrast, on both the initial and follow-up questionnaires of the current study, all participants agreed with the statement "the audiologist used language I could understand." One other factor to consider is that both of these studies are relatively old, and that audiological training and professional development would have changed in the last two to three decades.

It was surprising to find that the participants in this study reported that the audiologist's counselling at the hearing test appointment did not impact on their decision whether to pursue HAs or not. This may in part be due to the lack of variation in this sample given that the majority of participants gave scores between 41 and 62 (out of 72), and/or that they had already decided prior to their appointment. Unfortunately no other published studies have investigated the association between HA uptake and audiological counselling during the hearing test appointment.

In the interview and HA Follow-Up Questionnaire, participants were invited to offer suggestions for how the audiologist could improve their informational counselling. Two suggestions offered were more explanation of the audiogram, and providing an opportunity for questions. Although the overall results suggest that participants were satisfied with the informational counselling provided by the audiologists, two factors need to be considered. Firstly, the participants may have been selected by the audiologist to be involved in the study because they seemed satisfied with the service during the appointment. Secondly, the patients may have not known what to expect from the audiologist during the appointment and were appreciative of any help that they received. There were a number of participants for whom procedures which are considered integral to audiological counselling were not provided, such as asking the patient if they understood before moving on to the next topic, discussing how to communicate better and/or cope with the HL, and presenting non-HA options. It would be useful to ascertain from patients if these aspects of informational counselling are important to them.

One recommendation arising from this study is that patients should be provided with information prior to the HA fitting appointment to inform them about HAs, how they are fitted, and the adjustment process. This is in concert with English's (2008) recommendation that information be given in doses at the appropriate times, as well as in written form for the patient to review in their own time. Surveys of parents of children with HL have also found that the parents wanted more information in written form (Martin et al., 1987; Sweetow & Bar-

rager, 1980). Providing such information enables the patient and family to be informed, active participants in the aural rehabilitation process, which favours compliance and successful management of the HL (Taylor, 1993). This is in keeping with the rehabilitation model of service delivery, as opposed to a medical model, where a two-way communication process is encouraged, and patient participation is initiated immediately from the identification of an HL and continues all the way through the management stage. This is reported to enhance patient motivation to undertake the rehabilitation recommendations (Erdman, Wark, & Montano, 1994).

Strengths and Limitations of This Study

The findings of the current study need to be considered in light of the relatively small sample size. Due to extraneous circumstances, the study and hence recruitment had to be completed within a limited time frame. All attempts were made to ensure that each audiologist was aware of the need to recruit eligible patients, however, it remains unknown as to whether the slow recruitment rate was due to patients declining to be involved, patients not being eligible, clinicians forgetting about the study, and/or clinicians choosing not to invite certain patients.

There is the risk that a Hawthorne effect may have occurred in the current study, whereby the audiologists' behaviour was altered as a result of them being aware that they were being evaluated as part of the study. As mentioned, it was proposed that the receptionist would inform the patient about the study and keep the audiologists blind to which patients agreed to be involved, however, the clinic managers and ethics committee would not approve this. Even despite being aware of being involved in the study, there were still some deficiencies noted in the audiological counselling provided for some participants.

A strength of this study is that the Initial Questionnaire was completed by all participants within 24 hr of the hearing test, thereby minimising the potential for errors in recall. However questionnaires have inherent limitations, whereby they rely on the participant interpreting the question in the manner it was intended and responding honestly. This study went some way to accounting for this by incorporating a semi-structured interview to check the questionnaire responses. Interviews have the benefit that both the interviewer and interviewee can clarify the meaning of the question and/or response, and that a more-detailed picture of the patient's true perspective can be elicited using open-ended questions, rather than an approximation from closed-set options. It is noted, though, that the current study used phone-based interviews for some individuals who resided long distances from the test centre, along with verbally-administered measures which rely on the individual using just their hearing to interpret what the researcher was asking. These approaches have been reported by some researchers to have compromised validity amongst samples of hearing-impaired individuals (Gilholme-Herbst & Humphrey, 1980).

CONCLUSIONS

An individual's immediate emotional reaction to the diagnosis of HL may vary, but the common responses are a sense of loss, sadness, resignation, as well as relief. The variation in emotion may reflect the different phases of the grieving process which the individuals with the HL are in, for example, denial, anger, bargaining, depression, or acceptance (Kubler-Ross, 1969). As this will affect treatment outcomes (Crowe, 1997), intervention should account for which stage the individual is at (Aminzadeh et al., 2007). Asking the patient how they feel about their hearing test results and gauging the extent of their reaction will also be useful given that the emotional reaction of some patients precludes them from retaining any further information given by the audiologist. If the audiologist ascertains that the individual is feeling very emotional about the diagnosis, proceeding to discuss treatment options may not be appropriate at that time.

This study's evaluation of both informational and affective audiological counselling currently provided by experienced audiologists, found that these New Zealand audiology patients were generally happy with the care they received, both when they were diagnosed and when they were fitted with their HAs. However, these results were from a limited number of patients, for a limited number of audiologists, and were restricted to the hearing test and HA fitting appointments only. Further, the audiologists involved in this study were experienced clinicians who were aware of the study being conducted. Hence the findings cannot be generalised to all audiological practice in New Zealand.

It is planned for the results from this study, in conjunction with guidelines and skills addressed in audiological counselling publications (Alpiner, 1997; English, 2008; Holland, 2007; Luterman, 2006; Vargo & McFarlane, 1994), and the practical tools developed by the Ida Institute (www.idainstitute.com), to be used to develop a counselling workshop for audiology students and interested clinicians. Such training would hopefully provide audiologists with a greater level of knowledge and skills to provide audiological counselling, thereby facilitating a better quality of patient-focused counselling, as well as educate as to when to refer a patient to a professional counsellor.

Finally, as a result of the recommendations from the participants in this study, brochures are being developed to be given to patients prior to their hearing test which explain the basis and causes of HL, means of prevention, the different types of HL, and the methods of treatment and management. A brochure is also being developed to give to patients who choose to have HAs which explains about HAs, how they are fitted, and the adjustment process. These aim to empower the patient and provide them with the vocabulary and knowledge about what to expect in an appointment, enabling them to be informed, active participants in the fitting process. The audiologist-patient relationship is generally long term and relies on the patient accepting and actively participating in their rehabilitation (Taylor, 1993).

ACKNOWLEDGEMENTS

Funding for this research was provided by The Oticon Foundation in New Zealand. Appreciation is expressed to the audiologists and administrative staff at the 16 clinics that were involved in the study, as well to the participants for their time and effort. Thank you also to Dr Janet Carter for her consultation in the initial stages of developing this project, and for reviewing parts of this manuscript.

REFERENCES

- Alpiner, J.G. (1997). Hearing impairment: Adults and seniors. In T.A. Crowe (Ed.), *Applications of counseling in speech-language pathology and audiology* (pp. 307-322). Baltimore: Williams & Wilkins.
- American Speech-Language-Hearing Association. (2006). *Preferred practice patterns for the profession of audiology* [Preferred practice patterns]. Retrieved October 15, 2009, from www.asha.org/policy.
- Aminzadeh, F., Byszewski, A., Molnar, F.J., & Eisner, M. (2007). Emotional impact of dementia diagnosis: Exploring persons with dementia and caregivers' perspectives. *Aging and Mental Health, 11* (3), 281-290.
- Barlow, J.H., Turner, A.P., Hammond, C.L., & Gailey, L. (2007). Living with late deafness: Insight from between worlds. *International Journal of Audiology, 46*, 442-448.
- Bowman, G.S. (2001). Emotions and illness. *Journal of Advanced Nursing, 34*(2), 256-263.
- Carpenter, B.D., Xiong, C., Porensky, E.K., Lee, M.M., Brown, P.J., Coats, M., et al. (2008). Reaction to a dementia diagnosis in individuals with Alzheimer's Disease and mild cognitive impairment. *Journal of the American Geriatrics Society, 56*, 405-412.
- Crowe, T.A. (1997). *Applications of counseling in speech-language pathology and audiology*. Baltimore: Williams & Wilkins.
- English, K. (2008). Counseling issues in audiological rehabilitation. *Contemporary Issues in Communication Science and Disorders, 35*, 93-101.
- English, K., Naeve-Velguth, S., Rall, E., Uyehara-Isono, J., & Pittman, A. (2007). Development of an instrument to evaluate audiological counseling skills. *Journal of the American Academy of Audiology, 18*, 675-687.
- Erdman, S., Wark, D., & Montano, J. (1994). Implications of service delivery models in audiology. *Journal of the Academy of Rehabilitative Audiology, 27*, 45-60.
- Gilholme-Herbst, K., & Humphrey, C. (1980). Hearing impairment and mental state in the elderly living at home. *British Medical Journal, 281*, 903-905.
- Greville, A. (2005, March). *Hearing impaired and deaf people in New Zealand: An update on population numbers and characteristics* (Greville Consulting Report). Auckland, New Zealand: Greville Consulting.
- Holland, A.L. (2007). *Counseling in communication disorders: A wellness perspective*. San Diego, CA: Plural Publishing.
- Kubler-Ross, E. (1969). *On death and dying*. New York: Macmillan.
- Laplante-Levesque, A., Pichora-Fuller, M.K., & Gagné, J.-P. (2006). Providing an internet-based audiological counselling programme to new hearing aid users: A qualitative study. *International Journal of Audiology, 45*, 697-706.
- Luterman, D. (2006, March 21). The counseling relationship. *The ASHA Leader, 11*(4), 8-9, 33.
- MacLeod, C., & Hagan, R. (1992). Individual differences in the selective processing of threatening information, and emotional responses to a stressful life event. *Behaviour Research and Therapy, 30*(2), 151-161.
- Martin, F.N., George, K.A., O'Neal, J., & Daly, J.A. (1987). Audiologists' and parents' attitudes regarding counseling of families of hearing-impaired children. *ASHA, 29*, 27-33.
- Martin, F.N., Krall, L., & O'Neal, J. (1989). The diagnosis of acquired hearing loss. *ASHA, 31*,

47-50.

Robertson, M. (1999). Counselling clients with acquired hearing impairment: Towards improved understanding and communication. *International Journal for the Advancement of Counselling*, 21, 31-42.

Sweetow, R.W., & Barrager, D. (1980). Quality of comprehensive audiological care: A survey of parents of hearing-impaired children. *ASHA*, 22(10), 841-847.

Taylor, K.S. (1993). Audiologist Counseling Effectiveness Scale for the Elderly. *JARA*, 26, 69-78.

Vargo, J.W., & McFarlane, L.-A.H. (1994). Why didn't I say that? Techniques for counseling clients and their families. *Journal of Speech-Language Pathology and Audiology*, 18(3), 157-162.

APPENDIX A

INITIAL REACTION QUESTIONNAIRE

ID: _____ (researcher to fill in) Date: _____

Please complete this questionnaire within 24 hours of your audiologist appointment.

1. Were your results from the audiologist what you expected? Yes No Partly

Any comments _____

As a result of being told that you had a hearing loss, to what extent did you experience the following emotions

(please tick the most appropriate description):

	Not at all		Somewhat		Very much so
2. Shock	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Anger	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Sadness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Hopelessness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Relief	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Sense of loss	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Surprise	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Disbelief	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Apathy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Compared to how you felt prior to the audiologist appointment, how did your level of the following emotions change (please tick the most appropriate description):

	Reduced greatly	Reduced slightly	No change	Increased slightly	Increased greatly
11. Anxiety	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Guilt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Resignation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Optimism	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Embarrassment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Fear	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Vulnerability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Did you have any other emotions that were not listed above?				Yes	No
If yes, what? _____					

For the next two questions, please circle the most appropriate answer

19. Are you glad to have an official diagnosis?
 Not at all Somewhat Very much so
20. Did you feel that your emotional response to the test results meant that you had difficulty taking in other information the audiologist told you?
 Not at all Somewhat Very much so

Thinking about your appointment with the audiologist, please tick the most appropriate response:

	Do not agree	Slightly agree	Moderately agree	Considerably agree	Extremely agree
21. In explaining the results to me the audiologist used language that I could understand	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. The audiologist discussed how my hearing loss would affect my life	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. I found the amount of information the audiologist gave me overwhelming	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. The audiologist allowed me to express my feelings regarding the diagnosis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tick here if not applicable <input type="checkbox"/>					

	Do not agree	Slightly agree	Moderately agree	Considerably agree	Extremely agree
25. I felt I could ask questions when I wanted to	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. The audiologist answered my questions clearly and completely	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. I felt the audiologist was supportive during the consultation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. The audiologist was empathetic during the consultation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29. The audiologist seemed condescending	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30. I felt I could trust the audiologist	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31. The audiologist dealt with the fears and concerns I had about my condition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32. The audiologist seemed aloof detached and/or irritable with me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33. The information provided was relevant to my situation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34. The audiologist listened to me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35. I was satisfied with the information provided	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36. The audiologist was patient with me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
37. The audiologist seemed to understand my experience of hearing loss	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
38. I felt comfortable talking with my audiologist	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
39. The audiologist went at a pace that was appropriate for me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
40. Insufficient time was given to explaining the results and implications	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
41. The audiologist made me feel embarrassed about my condition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
42. The audiologist seemed to trivialise the issue of my hearing loss	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Do not agree	Slightly agree	Moderately agree	Considerably agree	Extremely agree
43. I would recommend this audiologist to a friend in a similar situation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
44. I feel that I am better informed about how to cope with my hearing loss	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Any comments:

APPENDIX B

INTERVIEW

ID: _____

Date: _____

Thinking about prior to your hearing appointment . . .

1. Did you feel you had a hearing loss? Yes No Perhaps
2. If yes, how severe did you feel the hearing loss was?
 Mild Moderate Severe Very severe
3. To what extent did your hearing loss cause problems?
 Not at all A little Moderately so Very much so
4. Where did most of these problems occur? _____

5. When were you first aware of your hearing loss? _____

6. Who made you aware of your hearing loss (if not yourself)? _____

7. Have other people commented on your hearing? Yes No Sort of
8. Is your hearing loss due to noise exposure?
 No Occupational Recreational Both Unsure
9. What proportion of your friends do you think have a hearing loss?
 None Some Approximately half Majority All

During the appointment

10. Which of the following emotions did you feel immediately after the audiologist told you your hearing test results:

	Yes/No	Has this emotion increased or decreased since then? Or has there been no change?
Shock		
Anger		
Sadness		
Anxiety		
Guilt		
Resignation		
Optimism		
Relief		
Sense of loss		
Embarrassment		
Surprise		
Fear		
Vulnerability		
Disbelief		
Hopelessness		
Apathy		

11. Is there anything the audiologist could have done better to improve how they:

Explained your results _____

Explained the consequences of your hearing loss _____

Explained how to communicate better or cope with the loss (i.e., listening tactics) _____

12. Did they detail any non-hearing aid alternative options _____

13. Did the audiologist ask you if you understood what he/she was saying before moving on to the next topic? Yes No Sometimes

14. Did you become distressed during the appointment? Yes No
 Why was this? _____

How did the audiologist react to your distress? _____

Could the audiologist have done anything to improve his/her reaction? _____

Demographic information

Age: _____ (in years)

Gender: Male Female

Ethnicity:

NZ European Other European Maori Pacific Islander Asian

Other _____

Marital status: Unmarried married/co-habiting divorced widow/widower other

Employment status: fulltime part-time retired unemployed student

General health: poor satisfactory good very good

Approximate annual income: <\$40,000 \$40-60,000 \$60-80,000 \$80-100,000 \$100,000+

Finally

Was your hearing test a screening test OR a full diagnostic assessment?

Have you applied for funding? No Yes **If yes,** ACC OR Enable

APPENDIX C
FOLLOW-UP QUESTIONNAIRE

ID: _____ (researcher to fill in) Date: _____

Date of the appointment when hearing aid(s) were fitted: _____

Did you see the same audiologist as for your hearing test? Yes No

<i>Thinking about your latest appointment with the audiologist, please tick the appropriate response: (if not applicable, leave blank)</i>	Do not agree	Slightly agree	Moderately agree	Considerably agree	Extremely agree
1. The audiologist used language that I could understand	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. The audiologist clearly indicated the purpose of the appointment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. The audiologist was supportive during the consultation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. The audiologist was empathetic during the consultation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. The audiologist listened to me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. The audiologist was sincere and gained my confidence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. I felt I could trust the audiologist	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. The audiologist went at a pace that was appropriate for me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. The audiologist was patient with me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. There was insufficient time in the one appointment to cover everything that I felt was necessary	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. I felt I could ask questions when I wanted to	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. The audiologist answered questions clearly and completely	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. The audiologist clearly described the process of follow-up appointments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. The audiologist made it clear when I should return for a follow-up appointment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Do not agree	Slightly agree	Moderately agree	Considerably agree	Extremely agree
15. The audiologist clearly explained the pros of hearing aid use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. The audiologist clearly explained the cons of hearing aid use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. The audiologist seemed aloof, detached, and/or irritable with me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. I found the amount of information the audiologist gave me overwhelming	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. I felt that the audiologist treated me as an individual	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. I am satisfied with the information I have about what kinds of improvements I can expect with my hearing aid(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. I would go back to this audiologist	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. I would recommend this audiologist to a friend	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

23. Were you satisfied with the amount of information you received?

Yes No Somewhat

Comment _____

24. Do you feel you have enough knowledge to use the hearing aids?

Yes No Somewhat

Comment _____

25. Are you hesitant or unclear about any part of the whole process (i.e., hearing loss or hearing aid issues)? Yes No

If yes, what are you unclear about? _____

26. Are there any improvements that you would like to see in the service that you received?

Yes No

If yes, what? _____

27. Is there anything that you particularly appreciated in the service that you received? _____

28. Was there anything that you were expecting from the audiologist that did not occur?

Yes No

If yes, what? _____

29. How satisfied are you so far with your new hearing aid(s)?

Very satisfied Satisfied Neutral Dissatisfied Very dissatisfied

Comment _____

30. What would have led you to get a hearing aid sooner? _____

Any extra comments: