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## Exploring Hearing Aid Use in Older Adults through Narratives

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**Exploring Hearing Aid Use in Older Adults through Narratives**

**(Thesis format: Integrated-Article)**

**by**

**Katherine Lockey**

**Graduate Program in Health and Rehabilitation Sciences**

**A thesis submitted in partial fulfillment of the  
requirements for the degree of Master of Science**

**The School of Graduate and Postdoctoral Studies**

**The University of Western Ontario**

**London, Ontario, Canada**

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## ABSTRACT AND KEYWORDS

This study explores the lived experience of hearing aid use and non-use of older individuals with hearing loss. A narrative approach was used to gain an in-depth understanding of the meaning and contextual issues that impact upon the adaptation process of older adults and their transitions in using hearing devices. Four women over the age of sixty took part in two face-to-face interviews. All of these women were identified as being consistent hearing aid users. Wengraf's biographic-narrative-interview guiding framework was used to gather data in this study. Data were analyzed both holistically and thematically from a phenomenological perspective to identify the meaning and essence of the participants' experience with hearing aids and hearing loss. Results revealed an overarching theme of meaningful participation in life situations and events that was linked to purposeful use and non-use of hearing aids. Barriers and facilitators related to participation, which in turn affect hearing aid use and acceptance, were uncovered. The results of this study have implications for audiologic research, practice, and audiologist education.

**Keywords:** hearing aids; assistive technology; narrative; aural rehabilitation; adaptation; participation; older adults

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## ***Chapter 1***

### ***General Introduction***

## ***1.1 Background Information***

### ***1.1.1 Hearing Loss Statistics***

According to the World Health Organization (WHO) 278 million people worldwide are estimated to have moderate to profound hearing loss in both ears (WHO, 2005). Hearing loss affects approximately 30% of Canadians over the age of 65, and 40-50% of those over 75 have hearing loss (Public Health Agency of Canada, 2006). Prevalence of hearing loss is even more pronounced in the elderly who live in nursing homes; it is estimated that 70-90% of these individuals have hearing loss (Cohen-Mansfield & Taylor, 2004). These high prevalence rates of hearing loss are low relative to predicted future numbers. The number of people worldwide with all levels of hearing impairment is rising, mainly due to a growing global population and longer life expectancies (WHO, 2005). By the year 2031 it is projected that 25% of the Canadian population will be over the age of 65, double the current number of seniors (Statistics Canada, 2005). These statistics demonstrate that the prevalence of hearing loss will increase dramatically over the next two decades, as will the need for hearing aids.

### ***1.1.2 Burden of Hearing Loss***

The Global Burden of Disease Report (Mathers & Loncar, 2006) suggests that adult onset hearing loss is the 12<sup>th</sup> largest global disease burden based on the Disability Adjusted Life Years (DALY) index. One DALY represents the loss of one year or equivalent of full health. Hearing loss is the 3<sup>rd</sup> largest disease burden for women (surpassed only by unipolar depressive disorders and cataracts) and the 2<sup>nd</sup> for males (surpassed only by unipolar depressive disorders) based on the years of life lost due to disability (YLD) index. The YLD index measures the amount of healthy life lost due to disability (Lopez, Mathers, Ezzati, Jamison, & Murray, 2006). Statistics show that hearing loss is the most common sensory disability in Canada, surpassing both vision and balance disorders (Statistics Canada, 2008). In addition, hearing loss has a high comorbidity rate with other disabilities, which has been found to compound the impact of disabilities on the lives of those affected (Kempen, Verbrugge, Merrill & Ormel, 1998).

### ***1.1.3 Hearing and Participation.***

The WHO's International Classification of Functioning, Disability and Health (ICF: 2001) defines participation as "the involvement in a life situation". Restrictions to

participation, including communication difficulties, are seen as disabling and having a negative impact on the individual's overall health. For many individuals with participation restrictions, specialized assistive technology (AT) is prescribed because it can reduce the impact of barriers and facilitate participation. However, Statistics Canada (2008) found that even with assistive technology, 50% of individuals with disabilities still have difficulty participating in everyday activities at least once per week. Thus in many cases, ATs are not able to restore full participation, especially for those with more severe disabilities. Of the individuals surveyed with communication disabilities, 7 out of 10 did not have any ATs that they required (Statistics Canada, 2008).

#### ***1.1.4 Hearing aid use statistics***

Hearing aids are the most commonly prescribed AT for hard-of-hearing individuals. The WHO (2005) states that properly fitted hearing aids can improve communication in at least 90% of people with hearing impairment. Since 2004, hearing aid sales have been increasing consistently; between 2006-2007 hearing aids sales increased 7.8% to exceed 2 million hearing aids sold in the United States alone (Strom, 2007). As of January 2005, there were over 5 million digital hearing aids in the marketplace and considering 74% of these were binaural fittings, there were 2.9 million consumers of digital hearing aids (Kochkin, 2005).

#### ***1.1.5 Reasons for hearing aid use***

Individuals with hearing loss can greatly benefit from hearing aid use. First and foremost, hearing aids improve an individual's ability to effectively communicate (Jennings, 2005). This improvement can affect many areas of the individual's life. Improving communication ability reduces the amount of reliance the person with hearing loss has on others to hear the message. The person with hearing loss would no longer need to have a story retold to them after the fact or rely on others to hear the phone or doorbell ring. This increased independence and decreased difficulty in conversations may reduce tension and frustration with communication partners. Communication partners may no longer see the individual with a hearing loss as a burden and thus increase their interaction with this person. Increased interaction and reduced tension may improve the hard-of-hearing individual's relationships with others. Another benefit apart from improved communication is the increased security of the individual with hearing

loss. A hearing aid may provide the hearing impaired individual with the ability to hear a siren or fire alarm, which can alert them of danger so they can take appropriate action in response to the threat (National Council on the Aging, 1999).

### ***1.1.6 Best candidates for hearing aids***

Most people develop hearing loss as they age, but statistics show that the earlier the hard-of-hearing individual is fitted with a device the better chance they have of becoming a consistent user (Salomon, Vesterager & Jagd, 1988). Salomon, Vesterager and Jagd (1988) demonstrated that the older the hard-of-hearing individuals, the less they wore their hearing aids. Many other studies have been undertaken in order to explore the characteristics of successful hearing aid users. Characteristics of successful hearing aid users include those with high levels of confidence and self-esteem, good speech understanding, extroversion, external locus of control, concerns about the hearing loss, motivation to hear better, expectations of improved quality of life, knowledge of how others view hearing aids and are not bothered by that, and greater self-rated disability and handicap independent of the severity of the hearing loss (Brooks & Hallam, 1998; Cox, Alexander, & Gray, 1999; Garstecki, 1996; Gatehouse, 1991; Humes, Wilson, & Humes, 2003; Jennings, 2005; Kricos, Erdman, Bratt, & Williams, 2007; Meister, Walger, Brehmer, von Wedel, & von Wedel, 2008; Stephens, Meredith, Callaghan, Hogan, & Rayment, 1991). These findings suggest that the use of hearing aids is largely dependent on the individual, rather than the hearing loss alone. Little is known about other factors in the lived context that might also contribute to use. Further research is warranted to facilitate a better understanding of the spectrum of issues that might contribute to hearing aid use.

### ***1.2 About the Primary Investigator***

I decided to take on this research in addition to my clinical training in audiology because I wanted to learn more about the research process and get experience doing research before considering it as a career. This Master's level thesis project began with curiosity as to why hard-of-hearing individuals buy hearing aids but do not wear them. I was interested in hearing the stories of the hard-of-hearing individuals and finding out the values and meanings they attributed to the process of acquiring and using a hearing aid, which lead me towards qualitative methods. I had previously been involved in

quantitative research projects but this study was my first experience with qualitative research. At that time, I was unaware that audiology is heavily influenced by postpositivism and the medical model of health, valuing objective research and absolute knowledge. Thus, there is a tension between my personal interpretivist ontological view of the existence of one reality that is experienced differently by everyone and that of my new profession. My minimal personal experience in the area of hearing aids and hearing aid use, as well as my view of the participants as the experts of their own stories, allowed me to bracket my own views and use similarities between the participants' views to guide the data analysis. Reflexivity was undertaken through keeping memos of my thoughts, assumptions, and feelings that emerged during the course of the research. Peer-debriefing with my supervisors allowed me to discuss my interpretations of the data as well as get advice and support regarding my interview techniques.



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## **Chapter 2**

# **Exploring Hearing Aid Use in Older Adults through Narratives**

## 2.1 Introduction

The past decade has experienced tremendous change and advances in hearing aid technology. The biggest shift in the hearing aid industry is the move from analog hearing aids with few settings to completely digital hearing aids that have many adjustable features and digital signal processing (Hearing Industries Association, 2005). Now more than ever, hearing health care professionals (audiologists and hearing instrument specialists) can provide hearing aids that can be individually tailored to suit their clients' hearing loss. Unfortunately these advances have not necessarily translated into increased hearing aid use; instead for some the hearing aid in their drawer is just more expensive and complex. This study attempts to provide some insight into the lived experiences of older adults and how those experiences have promoted or prevented hearing aid use. The findings underscore the importance of audiologic follow-up regarding hearing aid use. They also highlight the need of further research regarding the behaviour change process that individuals go through in adopting hearing aids.

## 2.2 Background Information

### 2.2.1 Statistics on Hearing Aid Use

Although it is well known that hearing aids are the treatment of choice for individuals with hearing loss, only one in five people that could benefit from hearing aids actually uses them (National Institute on Deafness and Other Communication Disabilities, 2007). In addition, Smeeth et al. (2002) found that only 60% of hearing aid owners used the hearing aids regularly. Kochkin (2003) found that for individuals with hearing aids who did not use their aids, only 10.6% were satisfied, 27.1% were neutral, and 62.3% were dissatisfied with their hearing aids. Dissatisfaction was greatest amongst individuals with severe to profound hearing loss, potentially due to the limited benefit this population receives from hearing aids. Age of the hearing aids was found to be related to use, with only 5% of hearing aids less than one year old being in the drawer and 30% of hearing aids over nine years old being in the drawer (Kochkin, 2000). Kochkin (2003) also surveyed the top ten reasons why individuals are not wearing their hearing aids. The top ten reasons in order of influence are: poor benefit, background noise, fit and comfort, negative side effects, price and cost, the individual believing that s/he does not need help, hearing aids no longer work, sound quality, unspecified reasons,

and volume control adjustments. A recent survey by Kochkin (2005) found customer satisfaction with hearing aids has increased due to sound quality improvements from digital signal processing. These improvements have also resulted in increasing market penetration of hearing aids (Strom, 2007). However, due to continued dissatisfaction with hearing aids in difficult listening environments, abandonment and inconsistent use of hearing aids remains high in the hard-of-hearing population (Kochkin, 2007).

Although Kochkin has shed light on reasons why people do not wear their hearing aids, the issues surveyed were focused specifically on the limitations of the hearing instruments themselves. Further research is needed to gather information from the client's perspective as to why they choose not to wear their hearing aids.

### ***2.2.2 The Process of Acquiring a Hearing Aid***

It is estimated that from the time that individuals become aware of their hearing difficulties they may wait eight to twenty years before visiting a hearing health care professional (Kyle, Jones, & Wood, 1985). Upon their first visit to a hearing health care professional, a hearing assessment is usually completed and the individual is evaluated for hearing aid candidacy. Audiometric results, such as degree of hearing loss and speech discrimination scores, client's perceived hearing difficulty, and their attitude towards hearing aids are some of the factors that hearing health care professionals consider when determining hearing aid candidacy (Doyle & Thomas, 1995). For the majority of hard-of-hearing clients, hearing aids are prescribed in this first meeting. The hearing aids are ordered and the individual then returns for an appointment for fitting of the device. The College of Audiologists and Speech-Language Pathologists of Ontario's Preferred Practice Guidelines for Adult Hearing Assessment by audiologists (CASLPO, 2008) states that audiologic treatment and follow-up are primarily determined by pure tone thresholds. When the individual does return for a check-up, the audiologist or hearing instrument specialist spends the majority of his/her time testing that the hearing aid is functioning optimally, dealing with comfort issues with earmolds/custom fit products, and adjusting the gain and features of the aid to best suit the user. Most audiologists rely on client self-report of dissatisfaction in order to determine ways in which they will alter their hearing aids. In many cases, the client wants to appear agreeable and compliant with the professional's advice, so in turn do not report difficulties or the abandonment of the

device (Verza, Lopes Carvalho, Battaglia & Messmer Uccelli, 2006). After the thirty-day trial period and follow-up appointment, there is typically minimal contact between the audiologist and the hard-of-hearing individual. Thus, throughout the whole process of hearing assessment, treatment, and management the person is essentially removed from the process, with the hearing aids set primarily according to the individual's hearing loss. Currently there is no universally accepted, evidence-based method for assessing hearing aid coping and adaptation capabilities of persons with hearing loss.

### ***2.2.3 Consequences of Device Abandonment***

Abandonment of assistive technology (AT), including hearing aids, can have many negative effects not only on the device owner but also on the device provider. ATs are recommended in order to increase an individual's functional capabilities and participation in activities (Reimer-Reiss & Whacker, 2006). Hearing aids are prescribed in order to help meet hard-of-hearing individuals' communication needs as well as provide them with auditory cues for monitoring the environment. Thus, neglecting to use the aids means that the individual's hearing needs remain unmet, which can result in decreased independence, security, and quality of life (National Council on the Aging, 1999). Individuals with hearing loss who do not wear hearing aids are also said to report higher rates of depression, sadness, anxiety, and paranoia than those with hearing aids (Millar, 2005). Also five to 23% of middle age adults with mild to moderate hearing loss have a difficult time coping with family relationships and their work (Davis, 1985). The purchase and later abandonment of ATs results in wasted individual and health care funds. Abandonment also reflects negatively on the health care professional who provided the AT and can have a negative effect on the client-provider relationship (Verza, Lopes Carvalho, Battaglia, & Messmer Uccelli, 2006). Current information regarding abandonment of ATs has been gathered through surveys and questionnaires and is focused mainly on mobility devices. Hearing aids have their own unique issues apart from mobility devices. Therefore, the results of other abandonment studies are not completely transferable to the hearing aid field. Also, no qualitative research has been undertaken to identify the effect of hearing aid abandonment on an individual's life.

### ***2.2.4 Factors that Impact Hearing Device Use***

Southall, Gagné, and Leroux (2006) studied factors that impact on the use of hearing assistive technologies (HATs) other than hearing aids and found the recognition of the hearing difficulties as serious, consultation for acquisition of devices, increase in sound quality, and a positive attitude were necessary for the individual to adapt to the full-time use of HATs (Southall, Gagné, & Leroux, 2006). In contrast, stressors in everyday life, cost of the device, and lack of confidence and self-esteem were all found to be all barriers to the uptake of HATs.

Gender differences were also found to influence audiologic help-seeking as well as adherence to audiologic recommendations. Females were more likely to use nonverbal communication strategies, to place greater importance on participating effectively in social situations, to report more anger and impatience in conjunction with the hearing loss, and to admit to experiencing negative feelings during everyday communication. Thus, females were more likely than men to acknowledge their hearing loss, to obtain amplification, and to comply with audiologic recommendations (Garsteki & Erler, 1998). Further qualitative research is needed to achieve a deeper appreciation of the hearing aid adaptation processes of men and women and to examine the differences between the ways the sexes adapt to these devices.

### ***2.2.5 Reasons for This Research***

To provide the best possible care, hearing health care professionals need to have an in-depth understanding of their clients beyond the hearing loss. Currently, little is known about the process of hearing aid abandonment. Explorative qualitative research must be undertaken to gain in-depth knowledge and appreciation of the hearing aid abandonment process. Explorative qualitative research is used to inform further research and practice directions (Wengraf, 2001). The current qualitative study was undertaken to explore the lived experience of hearing aid use and non-use of older individuals with hearing loss. This study focused on older individuals not only because they are the main consumers of hearing aid technology but also because their adjustment to hearing aids involves the interaction of many complex factors. The purpose of this study was to learn more about consistent hearing aid users in order to find ways to promote hearing aid use

in non-users. Thus, this study uncovered barriers and facilitators to hearing aid use identified by consistent hearing aid users.

## **2.3 Methods**

### **2.3.1 Methodology**

Van Manen's (1998) interpretive phenomenological approach was used to understand the lived experience of the participants in the hearing aid adoption process. This approach involves the inductive construction of knowledge through gathering information from a number of individuals about a particular experience. The subjective perspective of the hearing aid users affects the process they go through. The context in which hearing aid adoption occurs is a key factor needed to understand the meaning and value behind the experience of the participants (Paley, 1997). A phenomenological approach assumes that reality comes from many perspectives, that people are experts on their own reality, and that they can reflect on and narrate their experiences (Rivero-Vergne, Berrios, & Romero, 2008) thus, we decided to let the participants direct the course of the interview and give voice to their experiences.

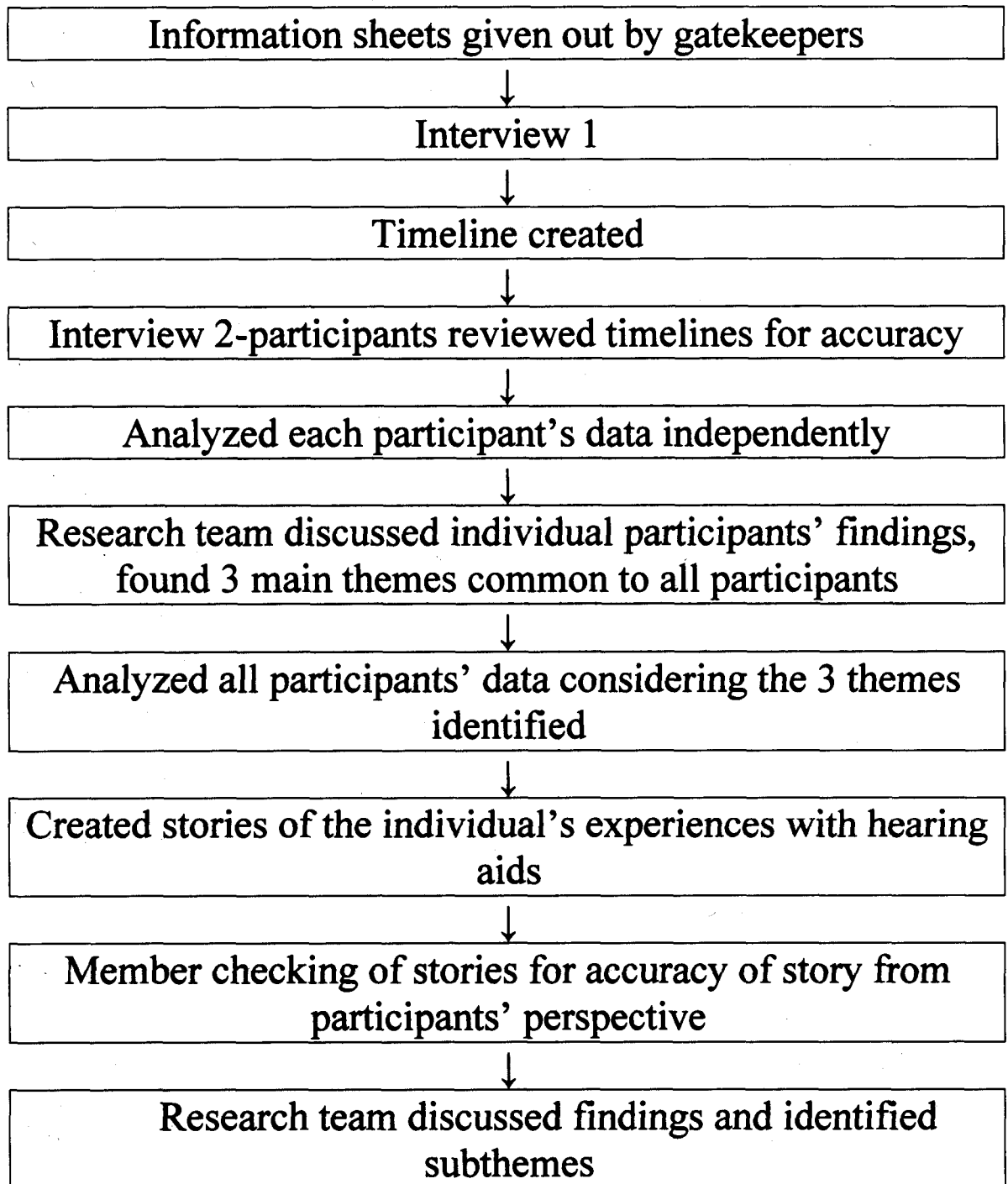
### **2.3.2 Design**

In-depth narrative interviews were conducted by the primary researcher in order to gather stories of the participants' experiences with their hearing aids. Data were collected from four hard of hearing older women who used their hearing aids on a daily basis. The use of narrative is congruent with the reflection on life experiences with persons in later life (Wengraf, 2001). The narrative style allowed the participants to direct the course of the interviews. It provided an in-depth understanding of the meaning and contextual issues that influenced the adaptation process and transitions in using hearing devices. Narratives also illuminated the strengths and weaknesses of using hearing aids based on the lived experience of the participants and the issues they needed to resolve in order to successfully adapt to their hearing aids.

Figure 1 demonstrates the design of the study step by step. The researcher conducted two semi-structured interviews with each participant using Wengraf's (2001) biographic-narrative-interview framework as a guide. The first interview involved the introduction of the researcher and the purpose of the study, as well as the participant sharing her story of hearing aid use as she chose to tell it. In between interviews a



## Methods



*Figure 1. Methods*

timeline of the story was created noting specific events and important points mentioned by the participant (see Appendix A for participant's timeline). The timeline was also given a title by the researcher. The title was a metaphor meant to represent the individual's experience with hearing aids. The timeline was presented to the participants at the beginning of their second interview, when participants were invited to further elaborate on and clarify their story. The participants then commented on their own stories and their titles. The participants were given the opportunity to make changes to and provide feedback on the timeline in order to ensure the stories were accurate reflections of their experiences. Further questions related to the purpose of the study, such as factors decreasing hearing aid use, were then asked by the researcher. The questions were different for each individual, based the information needed and the information already received from the participant. Field notes on nuances and impressions from the experience of the researcher during the interview were kept. A journal was also used to record the researcher's feelings and reflections on the interview process as it proceeded.

The timelines and data analysis of the participants were combined to create stories of the experiences the participants had with their hearing aids (see Appendix B). Each of the participants attended a third meeting where they read their analyzed story and gave their feedback regarding its accuracy. Giving the participants an opportunity to review the reconstruction of their stories and to comment on it is consistent with the narrative process (Wengraf, 2001). These stories must represent the realities of the individuals and their lived experience. The member-check not only gives the participants the opportunity to validate the findings of the study but also gives them a hard-copy of their story that they can keep and share with others. Further to this, the process of going back to the participants during the research process helped give the researcher feedback on the authenticity of the interpretations about their experiences in using hearing aids (Wengraf, 2001). The participants did not make any significant changes to the timelines or the thematic analysis but made slight changes to the dates and order of events. This research was approved by the University of Western Ontario Health Sciences Research Ethics Board (see Appendix C for Office of Research Ethics Approval Notice).

### **2.3.3 Participant Selection**

Purposeful sampling was used in order to find participants with rich lived experiences with hearing aids. Purposeful sampling is said to be the dominant strategy in qualitative research (Patton, 1990). Purposeful sampling involves the recruitment of information-rich participants who can be studied in depth (Patton, 1990). Two sampling techniques were employed to recruit the participants. One of the participants was recruited through an aural rehabilitation class ran by the primary researcher. The other three were recruited through gatekeepers (Flick, Kardorff, Steinke, & Jenner, 2004) to help recruit seniors using a senior-to-senior process. The gatekeepers distributed information letters to their peers who had had hearing aids for 5 years or more and who wore them on a daily basis. A small sample size was expected and acceptable because, according to phenomenological researchers Pollio, Henley, and Thompson (1997, p. 51), "although not a formal methodological rule, the situational diversity necessary for identifying thematic patterns is often provided by three to five interview transcripts." There were four women who responded who met the inclusion criteria. All participants had mild to moderately-severe sensorineural hearing loss, were between 60 to 85 years of age, were mobile, and were living independently in the community. Participants were cognitively intact as judged by the researcher, had a minimum high school level education or equivalent, and were able to communicate expressively and receptively in English.

### **2.3.4 Data Analysis**

Flick, Kardorff, Steinke, and Jenner (2004) argue that the strength of qualitative research is its receptiveness to possible adaptations guided by the on-going analysis of the research process. Video transcripts were transcribed verbatim. Initially each narrative was analyzed holistically by the primary researcher (Lieblich, Tuval-Mashiach, & Zilber, 1998) with the story structured as a timeline and sections interpreted in the context of the entire narrative (see Appendix A). The participants' interviews were then reduced to categories or themes that were recurrent in the stories (Lieblich, Tuval-Mashiach, & Zilber, 1998). A phenomenological viewpoint was employed to uncover the themes, because during the interviews the participants spoke at length about the meaning and value that they placed in their experience with hearing loss and hearing aids.

Phenomenological analysis was used to explore and understand the diverse perspectives of the participants' journeys. The phrases and the words that underscored the essences and nuances of the participants' experiences with hearing aids were chosen from the transcripts. The phrases were written and then grouped or clustered into common themes and separated into envelopes. The data from one of the participants was analyzed independently by each researcher and the findings were later discussed and consensus was achieved through open dialogue among the researchers. The researcher then met with supervisory and advisory members of her thesis committee to review the findings and to facilitate a peer review of the thematic analysis and process. Next the researchers used diagramming (Strauss & Corbin, 1998) to create graphics of the themes and stories and to capture an understanding of all of the participants' stories. This diagramming process helped crystallize the experiences of the participants relevant to the use of hearing aids (Borkan, 1999).

Once the interviews from all four participants were analyzed thematically, the findings were discussed amongst the researchers and three common overarching themes were identified. The data were then analyzed again with these themes in mind. The findings then began to take shape as a story (see Appendix B) with quotes and context relative to those themes. From the data collected, only the themes associated with use and non-use of hearing aid technology are discussed in this article.

### ***2.3.5 Trustworthiness***

The trustworthiness of the study findings was ensured through several procedures. Kitto, Chesters, and Grbich (2008) state that the following must be undertaken to ensure the trustworthiness of the qualitative research: clarification and justification, procedural rigour, representativeness, interpretative rigour, reflexivity, evaluative rigour, and transferability. Clarification and justification of the analysis was undertaken ensuring the research question was clear and that the methods chosen were justified. Procedural rigour was maintained through in-depth description and transparency of the methods. Representativeness of the data was ensured through ensuring the participants selected were consistent with the purpose of the study (age and consistent hearing aid use) and through employing two sampling techniques to expand the variance between the experiences of the participants. Interpretive rigour ensures research relates to a full

demonstration of the data/evidence (Kitto, Chesters, & Grbich, 2008) and was achieved through several techniques. It was accomplished through peer-debriefing after each stage of the data analysis as well as through having more than one researcher analyze the same data set in order to examine the congruence of the findings that were emerging.

Interpretive rigour was also ensured through the several stages of member checking where the participants were asked to verify the accuracy of the findings from their perspective. Reflexivity was maintained through openly sharing the influence that the researchers' views, the participants, and the subject matter had on the results (Green & Thorogood, 2004). It was also achieved through taking and later reviewing field notes of the primary researcher's thoughts, assumptions, and feelings that emerged during the course of the research. Evaluative rigour was maintained through procuring approval from the University of Western Ontario's Health Sciences Research Ethics Board and by obtaining appropriate consent as well as ensuring the comfort, safety, and confidentiality of the participants. Clear description of the research methods and participant demographics (see Table 1) also helped improve transferability of the research for audiologic practice and for further research possibilities.

## **2.4 Findings**

In this section a summary and description of the participants and the findings will be presented. Pseudonyms will be used for each participants to protect their anonymity. The findings are based upon the thematic analysis of the transcripts, the reconstruction of the participants' chronological life events in the use of hearing aids and the researcher's reflexive notes on emerging themes in the data. This section will elaborate an illustration of the final themes and subthemes that emerged through the study and will also offer a sampling of quotes to substantiate these themes. Further participant demographics are summarized in Table 1.

### **2.4.1 Participant Demographics**

Four women between the ages of 69 and 82 years participated in this study. Demographic information for the participants appears in Table 1. Three of the women were given an information sheet describing the study by the grandparents of the primary investigator and then phoned the primary investigator to volunteer to participate. One of

Table 1

*Participant Demographics*

	<i>Age</i>	<i>Degree of Hearing loss</i>	<i>Years of hearing aid use</i>	<i>Age of current aids</i>	<i>Type of Hearing aids</i>	<i>Daily use</i>	<i>History of Aural Rehabilitation</i>
Christine	80	Moderate sloping to moderately-severe	20	1 year	In-the-ear hearing aids	When leaves the house	Yes
Allison	83	Mild sloping to moderate	6	3 years	In-the-ear hearing aids	From moment wakes up till goes to bed	No
Rebecca	69	Mild sloping to moderate	5	5 years for one, 2 years for the other	1 In-the-ear 1 In-the-canal hearing aids	When interacts with others	No
Anna	61	Slight sloping to mild	30	4 years	Open fit hearing aids	When leaves the house	No

the women attended a speechreading course co-instructed by the primary investigator, was provided with information about the study, and agreed to participate.

Christine is a 79 year old retired school teacher who has her master's degree in education. She has a moderate sloping to a moderately-severe sensorineural hearing loss and has had hearing aids for approximately 20 years. Christine wears her hearing aids on a daily basis; she always puts them in before she leaves the house. She remains active in many social groups and participates in aural rehabilitation classes to improve her speech reading and communication skills.

Allison is an 82 year-old woman who lives with her husband. She is active both physically and socially through mall walking and other community groups. She has a mild sloping to moderate sensorineural hearing loss and first purchased a hearing aid 6 years ago. Allison puts her hearing aids in when she wakes up and takes them out when she goes to bed at night.

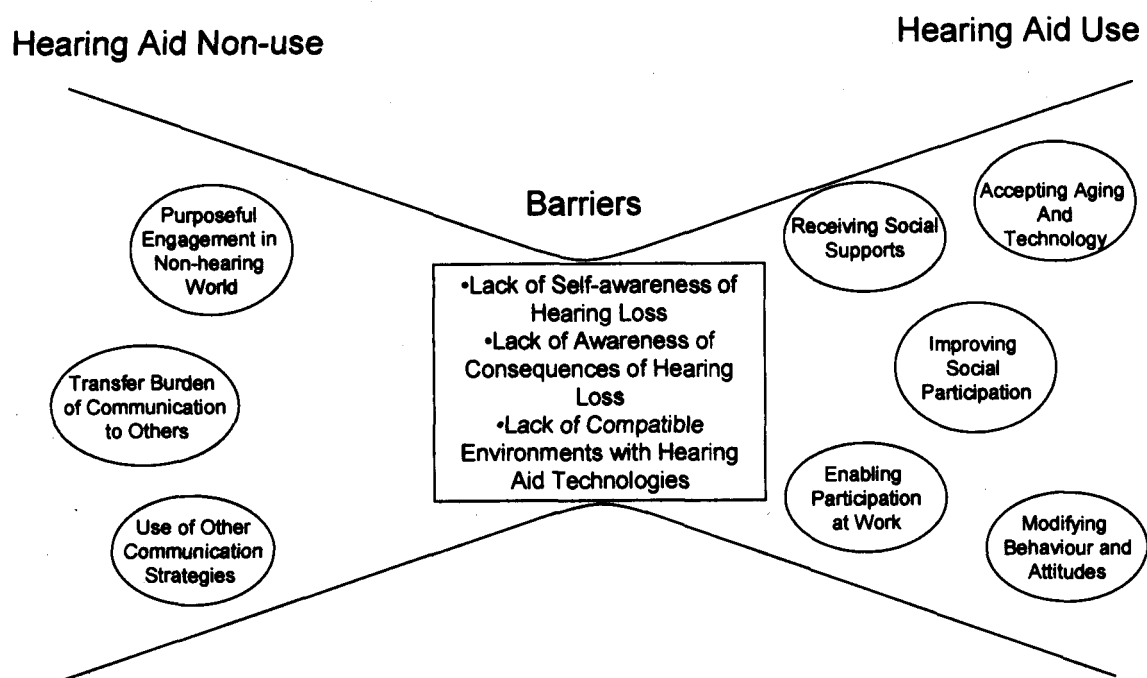
Rebecca is a widowed 69 year old woman who lives on her own. She is a retired mental health nurse who is an active volunteer and an avid mall walker. She has a mild sloping to moderate sensorineural hearing loss and first purchased a hearing aid 4 years ago. Rebecca wears her aid when she leaves the house.

Anna is a divorced 61 year old homemaker who has worn hearing aids for over 30 years. She has a slight sloping to moderate sensorineural hearing loss and has had many ear infections that were exacerbated by the use of her previous hearing aids. Anna suspects that her hearing loss occurred earlier in her life, but remained undiagnosed until she was in her thirties. Anna wears her hearing aid when she leaves the house, except if the place she is going is particularly noisy. She is currently living with her partner and volunteers with several community groups.

#### ***2.4.2 Meaningful Participation***

The main overarching theme of *meaningful participation* underscores the experiences of the participants in using and not using hearing aids. The main themes that elaborate use and non-use include; a) Meaningful Participation without Hearing aids, b) Barriers to Participation, and c) Meaningful Participation through Hearing Aid use. The decision to use or remove hearing aids as a means to communicate in everyday life is linked with the participants' views and beliefs about their needs for meaningful

## Meaningful Participation



*Figure 2. Meaningful Participation Continuum*



participation within social or occupational contexts. The themes from this study are graphically depicted (see Figure 2), to illustrate the dynamic nature that participation plays in the daily use and non-use of hearing aids. The graphic as a whole represents the finding that meaningful participation is a continuum with hearing aid use and non-use at either end and with barriers constricting participation in the middle. In accordance with the timelines given by the participants (see Appendix A), the continuum of participation starts on the left of the timeline with non device use and moves towards consistent use on the right side. While presently the majority of the participants remain on the right side of the continuum, they continuously move between use and non-use based on personal decisions depending on social and environmental experiences in the lived context.

#### ***2.4.3 Meaningful Participation without Hearing Aids***

All of the women expressed that they purposefully opted not to use hearing aids at times. The non-use of hearing aids did not limit their participation in meaningful activities or occupations. In fact in this study, in the majority of the situations in which the women chose not to use their devices, they are able to participate meaningfully without their hearing aids. This ability to participate without amplification was found to reduce hearing aid use in these situations. Many of the participants felt that, because they could get along without hearing aids in certain situations, using the hearing aids in these situations was not worth the trouble. There are three main sub-themes of actions or strategies used by the women in this study that demonstrate non-use that were found to support meaningful participation without hearing aid use. These include: 1) purposeful engagement in the non-amplified world, 2) transfer of burden of communication to others, and 3) opting to use other communication strategies rather than hearing aids.

***2.4.3.1 Purposeful engagement in the non-amplified world.*** While all of the participants receive benefit from their hearing aids, at times they appreciate taking their hearing aids off and purposefully embrace the non-amplified world. When the women are at home alone they appreciate the silence and tranquility, where they can go about their daily activities without the added stimulation and stress from the auditory environment that is delivered by the hearing aids. Some activities do not require access to sound, and several of the participants in this study feel that sound actually detracts from certain tasks. Anna tells us,

*when we're sitting in here, it's really nice, and all of a sudden I thought if there were noise or clutter, anyone would dislike that...but you have no choice...I do...if I don't like what's going on I just go into my own world...which can make somebody very creative, because they can concentrate...*

In addition, Anna tells us that when she takes off her hearing aid she is able to be more introspective and creative. The non-hearing world has fewer distractions and allows Anna to focus on her thoughts and the task at hand.

**2.4.3.2 Transfer of the burden of communication to others.** Auditory-oral communication requires more effort and concentration from individuals with hearing loss than individuals who do not have hearing loss. This additional effort can be exhausting and stressful for the hearing impaired person in social contexts with others. To be able to participate successfully in communications with others, participants elected not to use the hearing aids. Instead, they sought assistance from others to promote their interaction. Some of the participants try to avoid the extra effort of hearing and put the onus on the other communication partner to ensure that the message is relayed effectively. Anna has taught her loved ones how to accommodate her through only responding to them if she can hear them without the use of her hearing aids,

*yeah...it took him awhile...what I did with him is I just didn't answer him...if he called me from downstairs and said something I didn't answer him...because I got tired of saying what...and he finally learned that he will come to the bottom of the stairs, call me, and then I go to the top of the stairs, and then I can hear what he has to say...because I'm sure he got sick of repeating..."*

This strategy places the burden on others to make accommodations in order to communicate with the person with the hearing loss.

**2.4.3.3 Opting to use other communication strategies rather than hearing aids.** Some of the participants find that, even with hearing aids, they need to use additional strategies in order to understand what others are saying. Many of the participants use complementary visual cues to help them interpret the message. Christine has been taking speechreading classes to help her read the lips of her communication partners,

*I know I'm afraid that unless it's something I very much want to hear, I'll let it go by and just not pick up on it...that's where I'm hoping the speechreading will help a little bit...but no, in a group, that's the difficult time"*

Thus, Christine is hoping that even if she cannot hear the other person properly, she will still be able to participate in the conversation through speechreading. Anna uses speechreading and closed captioning when watching the television to help her to fill in the gaps in the storyline that she does not hear,

*and watching TV. If there are no captions on the TV, even with my hearing aids in, I need to see what they're saying. But if they turn their head, or put their head down, I miss a few words, because some shows don't have captions.*

Closed-captioning helps Anna to understand the plot and enjoy watching television.

Without closed-captioning she is not able to watch television without bothering others in the room, through turning up the volume, and she misses important parts of the program.

#### **2.4.4 Barriers to Participation**

There are several barriers that limit hard-of-hearing individuals from participating fully in life. The three main barriers to participation include: 1) lack of self-awareness of hearing loss, 2) lack of awareness of the consequences of hearing loss, and 3) lack of compatible environments with hearing aid technology. These barriers prevented the participants from fully experiencing and enjoying activities that matter to them. While these barriers occurred more frequently when the participants were first coming to terms with their hearing loss, these barriers continue to affect the participants throughout their quest for meaningful participation.

**2.4.4.1 Lack of self-awareness of hearing loss.** Before their hearing loss was identified, many of the participants were not able to participate fully with others because they did not realize that they were missing parts of conversations. Allison stated, "*as I say, it sort of creeps up on you...you aren't really aware yourself, as much as other people are...*" Without being aware of their hearing loss the hard-of-hearing individuals would be missing more than they realize and would not think to pursue hearing aids that could improve their participation with others. Even with the diagnosis of hearing loss, participants may feel their loss is not severe enough to warrant the use of hearing aids in certain situations and thus choose not to wear them. Lack of awareness of the personal

impact of hearing loss may also cause both the hard-of-hearing person and others to misinterpret the cause of the communication difficulties. As Anna tells, *"I grew up to be thick, dumb, stupid, slow and really I'm not...of course I'm not going to learn if I can't hear..."* Anna believes that she had hearing loss in her childhood and that, if it had been identified sooner, she would have had more educational supports and would have been more successful than she believes she has been in her life.

**2.4.4.2 Lack of knowledge of consequences of hearing loss.** For persons with hearing loss, there can be a lack of awareness of the consequences of hearing loss for themselves and for others in their lives. Some individuals choose to cope with hearing loss by withdrawing from social situations. They would rather be isolated from others than to put in all the effort required and deal with the stress of communicating. The person with hearing loss does not necessarily have to be physically separated to be isolated from the conversation. Christine can be isolated just by not participating in the conversation,

*and she knows that I turn off... if I think the subject is important enough, I'll say what did you say, I'll get them to repeat, but if I figure that it's not something I have to...it's not a conversation I don't have to participate in, I won't bother...and...maybe that's giving up too easily...*

The hard-of-hearing individual's choice to avoid participating is apparent to others and may result in friends and family feeling excluded, angry, and hurt. Others may then choose to avoid talking to the person with the hearing loss, because they think that person does not care what they have to say. As Anna tells us, *"one of my neighbours where I used to live said "I don't bother even coming over because there's no point in talking or saying hi or anything because you can't hear me anyway."*

Thus, the individual may become even more isolated due to their hearing loss. Family members may try to make up for the hearing loss or feel obligated to take over roles and responsibilities that would normally be undertaken by the hearing impaired individual. In Anna's case, *"I never got up at night with my babies, I never heard them...my husband fed them...and they suggested I wear a hearing aid to bed...that lasted like one night..."* This role reversal may result in resentment of the family members towards the hard-of-hearing individual and, thus, put an added strain on their relationships.

#### **2.4.4.3 Lack of Compatible Environments with Hearing Aid Technology.**

Even when the individuals do choose to wear their hearing aids, certain environmental factors may reduce the benefit they receive from the instrument. One of the most common environments that people with hearing loss have difficulty communicating in is one with excess background noise. Even individuals who use their hearing aids consistently, Allison for example, struggle to participate in background noise,

*just sometimes you get in..., where there's a lot of people, I...I don't know why I have to listen to this! And I'll just turn them off ... (laughing)... it may have only happened once or twice...I don't do it very often...but...like in the mall, I'd never turn it off...but if you get like in a church basement or something, where the ceilings are low and everybody's really noisy...*

Thus, the hearing aid can be more of a hindrance than a benefit in some very noisy situations. There are other assistive listening devices on the market that can be used, with or without hearing aids, to increase the loudness of the message that the individual would like to hear relative to the background noise. Anna uses one of these devices called an FM system at church, "It's just wonderful. I feel plugged out of the world. They can talk and laugh and I won't hear them, I can hear the priest so that's good". Anna really enjoys the system she uses at church because it enables her to participate and hear what she went to church to hear: the priest's message.

#### **2.4.5 Meaningful Participation through Hearing Aid Use**

Findings suggest that all four participants wore their hearing aids to improve social participation in the context of their everyday life with others. Five main subthemes reflect the experiences that promoted and improved meaningful participation for the participants. The five subthemes that captured these experiences were are: 1) accepting social supports, 2) enabling participation at work, 3) enhancing opportunities for social participation, 4) accepting aging and technology, as well as 5) modifying behaviour and attitudes.

**2.4.5.1 Receiving social supports.** Family members were the first to notice and mention the participants' hearing losses. Although the participants eventually appreciated being made aware of their hearing loss, at first, it was not very easy for them to take. As Rebecca tells us,

*well it was fine that she mentioned, it...you don't, when you don't hear something, you don't realize you don't hear it, unless someone close to you says to you, do you hear that? You're missing something...and even though it's said out of care, it's still a child correcting a mother, and you have to get your head in the right space and say thank you.*

Rebecca went through a role reversal, with her daughter caring for her health and her hearing loss. Rebecca was apprehensive at first but accepted the care because she knew her daughter was just doing it out of love and support. All of the women mentioned that their family members act as great motivators and supporters of hearing aid use. The participants reported that their daughters monitor their progress with hearing aids in order to make sure that they are using the devices and receiving adequate benefit from them. As Rebecca tells us,

*I visited my daughter in Iowa and I have two grandsons, and they tended not to speak that clearly, and...she was talking to me about the hearing aid use, and she said "mom do you realize that sometimes when you had your back to them they were talking to you and you didn't hear them" ...and that really hit me...when it comes to being present for those that you love and when there's a hearing aid makes a difference... you wear the hearing aids, no matter how sensitive you are about it...*

Thus, Rebecca is motivated to wear the aids, despite the reluctance she feels, because they help her to hear and participate with the ones she loves.

**2.4.5.2 Enabling participation at work.** Both Christine and Rebecca first started noticing their hearing loss at work. The two women worked with the public and began to have problems hearing their clientele. Both women felt they needed to hear in order to do their job to the best of their ability. Rebecca says, "*...so it became important for me to be able to help people well...for me to do that....so, as a nurse, I got thinking about how best to serve others, and that meant I better well increase my hearing...*" For both

women the ability to hear became not a choice but a necessity, thus both purchased hearing aids to improve their interaction with others. Anna felt the same necessity when she began volunteer work at a hospice,

*well that's what I did. I bring it back in, and finally I couldn't go any longer without it and I was volunteering for Hospice and they were dying and I couldn't hear them and I was volunteering for hospitals and I had to. See if I was working every day I would have to wear hearing aids but I couldn't work in a bar or a restaurant*

Thus, the need to hear in their occupations became a strong motivator for the women to purchase and use hearing aids.

**2.4.5.3 Enhancing opportunity for improved social participation.** Another key motivator to increase hearing aid use is being able to improve social participation.

Without the hearing aids the participants miss a lot more of the conversation, which causes them to either struggle to follow or to decide to withdraw. Hearing aids amplify the voice of the talker so the hard of hearing listener no longer has to strain to hear, which makes listening easier and less stressful. In Allison's experience,

*"...yeah...oh yeah, if I'm talking to someone I definitely want to have them working"*

All four women make sure they have their hearing aids in when they are out socially with friends, because it helps them to be a part of the conversation as well as part of the group. Hearing aids can help improve social participation not only in group situations but also on a one-on-one basis. Rebecca tells us,

*It's a lot of bother....but when I met my close friend now, who...who has an accent, it became crucial, because when you are in a relationship, there is so much more subtleties of speech, of communication and laughter and joking and sort of informal stuff that you need to hear, and people don't like to repeat funny little jokes, it's not funny when you say it the second time, and if you want to have a smooth comfortable relationship with someone close to you, you have to hear*

Rebecca's hearing aids helped her to develop a more intimate relationship with her partner by allowing her to recognize the emotion and intonation behind his words.

**2.4.5.4 Accepting aging and technology.** At first the women saw their hearing aids as signs of old-age and they were concerned about how the hearing aids would affect their appearance and how others might respond to them. As Anna relates,

*when I was younger and you really wanted to look pretty like everybody else...to me, when I was young, I had...a flaw...it was bad enough that I had crooked teeth, it got fixed when I was 50, I had braces ...so I felt flawed, I felt different, I felt not like everybody else...you know what young people generally think...too hard on themselves*

Anna was struggling to fit in as it was, and hearing aids made the process even more difficult. She started to feel more detached from the hearing world and began to identify more with the non-hearing world. As the women began to grow older and their peers started getting hearing aids, they actually began to appreciate having gone through the hearing aid adaptation process sooner because they believed they were now ahead of the game. The women are no longer afraid that their hearing aids are a sign of their age, and feel comfortable with their appearance. Rebecca tells us,

*you know what's kind of cool...because I'm ...I'm getting older as the people around me are...getting older,...and they're starting to have a residual hearing loss, and with my hearing aids I'm hearing things they're not hearing...which is kind of cool... you realize that...there are... sometimes there's a certain advantages in the group now, that you are the better...you hear more than what they're hearing...and it makes a difference...*

The women are no longer the outsiders with hearing aids but one of many friends who have one. Thanks to their hearing aids, they are no longer the ones with the difficulties hearing, it is others with hearing loss who are now the ones struggling. With more of their peers wearing hearing aids, the hearing aids have now become more accepted socially.

**2.4.5.5 Modifying behaviour and attitudes to improve participation.** Just as hearing loss caused some of the participants to move towards a more solitary lifestyle, others had to change their attitudes and behaviours to maintain auditory-oral communication with others. For example, Rebecca was a shy, polite woman who had to become more assertive to make sure her communication needs were met, *"I don't really hesitate to tell someone if I'm not hearing well enough and people you know they're*



*usually very cooperative and they'll speak up...*" The participants were happy to begin wearing their hearing aids if that meant the hearing aids would improve their communication with others. Rebecca wanted to wear her hearing aids out with friends but is a care-free individual who would forget them consistently. Rebecca thus devised a way for her to remember the aids when she was going out,

*I'm not a very organized person and at that point I would often just walk out with out it and think ah! And because it was...not a major hearing loss, you would, say, remember your glasses, and I often walked out with out it...and it's not that I chose too, it's just I didn't remember... now it is part of my routine...and I have a little reminder on my door...well, it's not a sign or anything, bit it's something I notice...will make me remember...*

Thus, with time the women have devised their own strategies to improve their communication and participation. While they may not all be using their hearing aids to the same degree, they have all adapted to improve the meaningful participation in their lives.

## **2.5 Discussion**

Qualitative research was used in this study to gather insightful information rather than facts (Shaw, MacKinnon, McWilliam, & Sumsion, 2004). The use of narrative helped the researchers to not only uncover barriers and facilitators to hearing aid use but also, surprisingly, to discover that meaningful participation for the participants was achieved with and without the use of hearing aids. The new understandings gained regarding the use of assistive technology underscored by meaningful participation have implications for the practice of Audiology. These implications may influence the design of audiologic rehabilitation programs in order to focus on facilitating meaningful participation for hard of hearing persons. These new insights will be discussed in relation to the current literature, and suggestions will be made regarding implications for audiologic practice and future research. Limitations of this study will be shared.

### **2.5.1 Unpacking the Graphic: Barriers and Facilitators to Participation**

Findings from this study indicate that successful hearing aid use is not simply based on the characteristics of the device itself or due to the device-person interface, as previously explored in the literature (Kochkin, 2005). Instead hearing aid use is a part of

a much larger phenomenon; the role of hearing in participation. Hearing aid use, on the right side of Figure 2, can facilitate participation through enabling hard-of-hearing individuals to communicate more effectively at work and in social situations. Due to this improvement in communication ability, friends and family often encourage and motivate hard-of-hearing individuals to increase their hearing aid use, which can improve their meaningful participation. Acceptance of hearing loss and the ageist stigma associated with hearing aids has been shown to facilitate adjustment to hearing aid use. This acceptance and adoption of hearing aids, along with the modification of behaviours and attitudes towards hearing loss, enables hard-of-hearing individuals to utilize both hearing aids and strategies to hear the best they can.

While hearing aids do facilitate meaningful participation, these devices are not necessary for all types of meaningful participation. At times hard-of-hearing individuals choose to participate in the non-amplified world because it is more peaceful and less stressful than their world of distorted sound. Meaningful participation can also be achieved without hearing aids through using others devices and by employing strategies to facilitate reception of the signal, and this is represented on the left side of Figure 2. While strategies were used by the women to facilitate their participation without hearing aids, these can also be used in conjunction with hearing aids in order to improve the individual's communication abilities even further. Thus, providing the hard-of-hearing individual with information regarding these strategies can help them to meaningfully participate whether they choose to wear their hearing aids or not.

The centre of the continuum of Figure 2 is narrowed to represent the barriers that limit meaningful participation from occurring. Lack of self-awareness of hearing loss and lack of knowledge of consequences of hearing loss are barriers more commonly experienced before the individuals realize they have hearing loss, but this can occur afterwards that time as well. For example, the hard-of-hearing individual may opt not to use hearing aids or strategies because he/she believes that his/her hearing is better than it actually is, which may result in the individual missing out on meaningful information, without knowing it. Also, due to communication difficulties hard-of-hearing people have in background noise, noisy hearing environments are typically a barrier to participation with others. Thus, hearing aid use is based on more than just the characteristics of the

devices; it is dependant on the nature of the task in which the individuals wish to participate in, the environment in which the task takes place, and the individuals themselves. Further research is needed to identify further barriers and facilitators to participation, related specifically to the individual with hearing loss, and their effect on hearing aid use.

### ***2.5.2 Moving Beyond Audiologic Factors***

One of the main findings from this research is that non-audiologic factors are key motivators and barriers to hearing aid use. For instance, being able to participate in meaningful social activities facilitated the use of hearing aids by the participants. These findings expand the current understanding in the literature on the characteristics that effect HAT use (National Council on the Aging, 1999; Kochkin, 2005; Southall, Gagné, & Leroux, 2006) to highlight the importance of the contextual experience on the use of hearing aids. Thus, if audiologists are interested in providing their clients with a usable solution to their hearing difficulties then they need to move beyond the audiogram and consider the individuals as a whole in their lived context.

This poses a challenge for audiologists in Ontario, Canada given the move away from the use of person plus audiologic factors towards audiologic factors in isolation as the means to guide assessment and treatment. Over the past 30 years the procedures used for prescription and fitting of hearing aids have changed dramatically. Objective measures of hearing aid performance have made significant advances so that more than ever before, hearing health care professionals are able to finely tune hearing instruments to match the specific hearing loss and physical characteristics of the individual's ear. Subjective measures of communication needs, preferences, and hearing aid performance has also improved. Unfortunately, the uptake of subjective measures by clinicians has not kept pace with the uptake of objective measures. In 2008, CASLPO adopted a Practice Guideline for Hearing Assessment of Adults. In spite of stating that, "Hearing assessment must address not just the ear and hearing function but also the unique set of characteristics of the whole person" (CASLPO, 2008, p. 5) the guidelines asserts that audiologic treatment and follow-up are primarily determined by pure tone thresholds. Doyle and Thomas (1995) found that hearing health care professionals typically make decisions about hearing aid candidacy primarily based on audiometric factors (e.g, degree

of hearing loss, especially in the high frequencies, and speech discrimination scores). This shows a move toward the exclusive use of objective methods of hearing needs and performance in audiology. This trend appears to be moving audiology away from a biopsychosocial model of practice and toward a medical model of practice. It would seem that the person has been taken out of the process, with only their ears necessary to be in attendance at their appointments with the hearing health care professional. Objective measures are time-efficient and precise, thus de-personalizing the fitting is seen as positive, because it reduces the time spent with the client, allowing the hearing health care professional to see more people and thus generate more business. This practice direction is at odds with the findings in this study that suggest that what people do and where they do the things that are meaningful to them will impact upon hearing aid use, yet these factors have been de-emphasized in current audiologic practice. This discrepancy highlights the differences in the conceptual models used by clients (narrative model) and clinicians (medical model) to understand hearing loss, further distancing the clinician and the client (Duchan, 2004). More efforts will be needed to continue to emphasize the ethical and moral importance of considering the hard-of-hearing individuals in their lived context in the prescription and usability of hearing aids. Dissemination of research findings and further research will be needed to refocus the direction of audiologic practice in keeping with the lived experiences of consumers. While increasing the involvement of the client in the audiologic process may be time consuming, it allows the audiologist to provide truly individualized care designed to meet the specific needs of the person, not just their ears.

### ***2.5.3 Understanding Purposeful Non-Use of Hearing Aids as a Means to Participation***

One of the most striking findings from this study is the new insight into purposeful non-use of devices and meaningful participation in activities. Studies in the AT literature (Riemer-Reiss & Whacker, 2000; Verza, Lopes Carvalho, Battaglia, & Messmer Uccelli, 2006) have focused on elaborating reasons for abandonment of devices, assuming a lack of congruency in the fit of the device with the needs of the person. This study found that non-use of hearing aids may not be about total abandonment per se; it may be more focused on hard-of-hearing individuals finding a way to engage in tasks or activities that they find enjoyable or meaningful without the use

of an aid. It is currently accepted among health care professionals that ATs are facilitators for participation in activities that are meaningful to the person who uses them. However, the ability to meaningfully participate without ATs has not been mentioned previously in the literature. The women with hearing loss in this study suggested that, based on their tenure and everyday life with hearing loss, hearing aids are not needed at all times to achieve or experience meaningful participation. In fact, they actually appreciate the quiet and calm when they are at home by themselves and are not using their hearing aids. Kerr and Stephens (1997) found that the most frequently reported positive experience related to hearing loss is that of being less disturbed by unwanted sounds. In addition, other benefits of hearing loss were related to the development of sensory and mental skills, such as increased concentration and creativity (Kerr & Stephens, 1997). Thus, it is not always a negative outcome if the individuals do not wear their hearing aids at all times. Unlike other types of ATs, hearing aids are viewed as devices for communication, and not necessarily for tasks of daily living. As such, hard-of-hearing individuals may not be as motivated to use hearing aids on a consistent basis. The key is for hard-of-hearing individuals to be able to meaningfully participate in activities that they deem to be important to their lives, when using or not using their hearing aids. A negative outcome would be not being able to meaningfully participate either when using or not using hearing aids. When hard-of-hearing individuals are able to effectively use their hearing aids in conversations with others and increase their participation, the amount of time the individuals spend communicating with others may influence the amount of hearing aid use. In this study, significant others were key motivators to the uptake and use of hearing aids. Further research on the relationship between hearing aid use and meaningful social activity is needed.

#### ***2.5.4 Limitations to the Study***

The findings of this study reflect the specific experiences of the women who participated in sharing their stories with the researcher. All the participants in this study had acquired a mild to moderately-severe bilateral sensorineural hearing loss in adulthood, with one participant suspecting that her hearing loss had happened earlier in her life but had not been diagnosed until adulthood. Thus, the data do not reflect the experience of all individuals with hearing loss, those with congenital hearing loss,

individuals with more severe hearing losses, or individuals with unilateral hearing loss. It can also be assumed that Deaf individuals who communicate primarily through a visual language, such as American Sign Language, would have very different factors that influence their hearing aid use and non-use, because most experience meaningful participation with others without the need of auditory input at all let alone hearing aids. Therefore, the outcomes are not transferable beyond the study's participants.

Information sheets regarding this study were distributed to both men and women, but only women volunteered to be in this research. As previously stated women were more likely to place importance on participating effectively in social situations and felt more irritated when they could not hear than men (Garstecki & Erler, 1998). Thus, hearing aid use in men may be influenced by different factors than those described by the women participants.

Although narrative is an excellent method to capture the unique experience of the individual with hearing aids, it is not meant to be transferable to all hard-of-hearing individuals. Thus, even hard-of-hearing individuals with similar demographics will not necessarily experience these same barriers and facilitators. Guba (1978) states that there are three reasons to stop sampling: 1) exhaustion of resources; 2) emergence of regularities; or 3) overextension, going too far beyond the boundaries of the research. While the researcher was striving towards a full appreciation of hearing aid use, due to the limited scope of the project, and exhaustion of these resources through the two data recruitment strategies, only the data of four women were collected. Thus, further qualitative research is needed to gain further insight into the full impact of barriers and facilitators of hearing aid use on the hearing aid adaptation process, including men and younger hearing aid users. Additional research on the impact of meaningful participation as a mediator of hearing aid use outcomes among women is needed.

## **2.6 Conclusion**

This study identified that the womens' hearing aid use and non-use is related to meaningful participation in life situations and events. In turn, improving the hearing aid adaptation process requires a variety of strategies that can promote both purposeful use and non-use of hearing aids. Key barriers and facilitators to meaningful participation were all non-audiologic, emphasizing the need for client-centered services. Thus if we

continue to depersonalize audiologic services and neglect the role of the hard-of-hearing individual in his/her own hearing healthcare plan, then it is likely that hearing aids will remain in drawers rather than in the ears of the owners.

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## **Chapter 5**

### **General Discussion**

### 3.1 General Discussion

#### *3.1.1 Implications of Incorporating Qualitative Research into the Audiology Research Community*

This study was exploratory in nature and was effective in providing insight into the phenomena of hearing aid use as well as uncovering novel findings about purposeful non use and participation that had not previously been found in the literature. This study was the first to use narrative in the field of audiology. Qualitative research is not used extensively by researchers in audiology because of audiology's postpositivist underpinnings. Quantitative research is the field's paradigm of choice due to its objective findings.

The prevalence of hearing loss in seniors (Public Health Agency of Canada, 2006) and the increasing proportion of seniors in our society (Statistics Canada, 2005) indicate that research involving this special population is needed in audiology. Narrative methods have been found to be effective in uncovering and understanding of the lived-experience of older adults (Wengraf, 2001). Older persons often do not feel competent or able to share what they feel is worthy of sharing during the research process. However, in this study, narrative methods enabled the participants to share their life experiences openly and candidly with the researcher. Audiologic researchers must bracket their postpositivist epistemology and be open to the use qualitative techniques when an in-depth exploration of the older individual's experiences is needed.

#### *3.1.2 Applications of WHO ICF model*

The application of the WHO ICF model has been a topic of discussion for many years in the field of Audiology (for a detailed discussion, see Gagné, Jennings, & Southall, in press) The finding that meaningful participation is the overarching theme behind hearing aid use and non-use emphasizes that the ICF (WHO, 2001) is applicable to hearing loss and to the field of audiology. The ability to receptively communicate with others was noted as a key facilitator for participation in this study and is congruent with the contents of the ICF. Since enhancing the social interaction was also a facilitator to hearing aid use, perhaps using the ICF as a framework for gaining an understanding of the hard-of-hearing individual's current level of participation may provide insight into their need and potential use of HATs. The use of the ICF (WHO, 2001) has been

suggested as a framework to identify rehabilitation goals (Gagné & Jennings, 2008). Doing this requires hard-of-hearing individuals to be intimately involved in the process of identifying goals based on the participation restrictions they experience and the rehabilitation program will be specific to these participation restrictions (Gagné & Jennings, 2008). Further research is needed to determine the link between participation needs and hearing aid use, as well as the use of the ICF as a framework for assessment and goal identification.

Many other health care disciplines have adopted the WHO's ICF model and have looked at the effectiveness of ATs for alleviating participation restrictions (Riemer-Reiss & Whacker, 2000; Verza, Lopes Carvalho, Battaglia, & Messmer Uccelli, 2006). However, the finding that meaningful participation is achieved with purposeful non-use of the AT is a new concept in the AT literature. While this study only examined hearing aids, this finding can be used to improve interdisciplinary understanding of the relationship between participation and other types of ATs. Further research is needed to determine if meaningful participation can also be achieved through purposeful non-use of other types of ATs.

### ***3.1.3 Implications to Audiologic practice***

Social support, personalized environmental modifications and communication strategies, as well as the use of HATs were all found in this study to increase meaningful participation for hard-of-hearing individuals. These factors are common components of aural rehabilitation (AR) programs. Schow and Nerbonne (2007, p. 4) state that "Aural Rehabilitation (AR) is a process designed to counsel and work with persons who are deaf and hard of hearing so that they can actualize their own resources in order to meet their unique life situations." Group-based AR can provide hard-of-hearing individuals with additional social supports from others with hearing loss. This support and feeling of belonging to a group may enable individuals to modify their attitudes towards being more accepting of hearing loss and hearing aids, which would in turn increase hearing aid use (Hétu, 1996). AR classes also teach communication strategies, such as speechreading and environment modification, in order to help individuals to participate more fully in activities and to enhance their communication either with or without the use of the hearing aid. AR classes introduce HATs, which can improve the hard-of-hearing

individual's ability to hear a talker in troublesome listening environments, where hearing aids do not function optimally (Gagné & Jennings, 2008). Awareness followed by use of the HATs can reduce barriers to participation in these difficult environments.

Unfortunately, AR services are not prevalent within the practice of hearing health care professionals. Development of and access to AR programs that focus on facilitating meaningful participation for those who attend is recommended. Further research is needed to study the impact of AR programs, designed to facilitate meaningful participation, on hearing aid use.

#### ***3.1.4 Implications for the Education of Audiologists***

Although AR courses are offered in most audiology programs across the country, the majority of the courses in the curriculum focus on hearing aids as the main treatment for hearing loss. Audiology programs must train future clinicians to look beyond the audiogram and encompass a broader view of the hard-of-hearing individual as a whole. Even if an audiology program does have an AR course, AR clinical practicum, and has a client-centered focus, once the audiologist gets out into the work force, employers often do not allocate time and resources to AR. Audiologists often do not push to have time for AR and many see it as unnecessary. The results of this study support the importance of including AR that focuses on meaningful participation within the clinical practice of audiology. Professional development initiatives must also be undertaken in order to educate practicing clinicians about AR techniques. Once more practicing audiologists start offering AR, students may see the benefit of AR in practice and become more confident in implementing the skills they have learned and transferring theory to practice.

#### ***3.1.5 Implications for expanding the awareness of the psychosocial and contextual influences on Hearing Aid use***

The findings from the study highlight that the hearing aid adaptation process is not automatic and is dependant on the interaction of many complex factors. However, society sees hearing aids as an easy fix for hearing loss (American Speech-Language Hearing Association, 2008). Audiologists must educate the public that hearing aids do not restore normal hearing and hard-of-hearing individuals may continue to struggle to communicate in certain situations. This information can provide the family and friends of hard-of-hearing individuals with realistic expectations of their loved-ones'

communication abilities in a range of situations. Further education regarding psychosocial effects of hearing loss and hearing aid use may also encourage friends and family to provide support and accommodate their loved ones to facilitate their meaningful participation. Education regarding the consequences of leaving hearing loss untreated may also help motivate hard-of-hearing individuals to not only procure a hearing aid but also choose to wear their aid more often. Audiologists must also educate other health care professionals regarding hearing loss and its influence on the individual's ability to participate in order to not only improve their own communication with their client but also provide them with a foundation for counseling their clients regarding the impact of hearing loss. Environmental barriers to participation were also reported in this study. Training other health professionals such as occupational therapists or nurses who have access to the hard-of-hearing individual's home environment about hearing loss, may allow them to make environmental modifications and introduce HATs to help decrease environmental barriers that reduce the individual's ability to participate. Thus, educating the public and other health care professionals about hearing loss has the potential to remove barriers and to facilitate participation.

### **3.2 Conclusion**

While audiologic practice is focused on the assessment, treatment and management of one small part of the body, hearing loss has a great effect on the person as a whole. Research, education, and practice in audiology all need to shift from their current objective, postpositivist views to a client-centered, holistic approach to assessment, treatment, and management of hearing loss, focusing on facilitating meaningful participation for the hard-of-hearing person. Audiologists also need to educate the public as well as other health care professionals about hearing loss and its effects on the lives of hard-of-hearing individuals and their families to reduce barriers and facilitate participation.

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## Hearing aids, a battle won

Before- My grandfather's hearing aids were pretty ugly...and I'm never sure that they were helping him that much...we all still shouted, mother had hearing loss but no aids

2001-2-children commented about hearing loss...five or six years ago, couldn't hear clients, talk low, problems in noise, didn't worry about how loud TV was unless kids were visiting

--denial that it was not hearing ...but it was they that were not speaking well...and that when I recognized that I did have a deficit...then I felt...when I was working with clients, that became extremely important...if I'm having trouble hearing...then it's not just my discomfort, it causes other people discomfort... so that's when I started wearing the hearing aids...more often when I was at work, but I still did not wear them...or it was one at that time...wear them at home...

-resisted getting hearing aids because I didn't like how they looked

-cost of aids was an issue

-feel isolated, feel that stupid when missed sounds

feelings of:-inadequacy, frustration, irritated people don't speak louder

2003- went to therapist to hear more proficiently at work, started not only affecting myself but my care of others

-missed what grandchildren said when my back was turned and I didn't like that, didn't like that my daughter was correcting me so it took awhile to say thank you for mentioning it

-first hearing test, mentioned loss in both ears

-had material that 2 aids were better but still went with only one

-I've only had my right hearing aid for about 4 years...

-I wore them around individuals with mental disabilities; felt that they were vulnerable so it was ok to show I was vulnerable

-kids were congratulatory, supportive

-with only one I had orient myself so hearing aid was close to person talking

-didn't like the audiologist who set aid too loud, need to build a consistent relationship with person testing you, more comfortable now

Didn't wear them consistently because:

worried about losing them,

annoyed by the wind

thought they weren't correctly tuned (too soft then too loud)

-uncomfortable with colleagues at work, when leading sessions

-wasn't an organized person, would walk out of the house without them and realise later

-sharp noises cause pain

-didn't like 2 because it sounded like at the bottom of a well

-felt didn't need them in certain situations,

-itchy, I take them out and put them back in later

Expected aids- to be socially better,

didn't expect pain of loud noises,

maintenance problems

2004-met a wonderful man with an accent, wanted to be able to understand him better, daughter suggested 2 aids and to wear my hearing aids regularly

2005-got left aid

- found a pamphlet which said you'd lose hearing in the other ear if it wasn't stimulated

- hit me hard

- now has a reminder on door to put in aids

- now has special compartment in purse for hearing aid batteries and put aid if

taken out

- even though have problems with noise still worn them

- needed to get used to taking them out when putting hairspray on, going in the shower, body gets used to them as part of you

- important to wear them for safety

- would be hard to go without 2, ok with only one

2007- wearing them more at home alone because don't want to turn up the TV to bother the neighbours

- now tells people she realizes they have a hearing aid and wants to tell them about it

- now teaching others to use aids

- has problems with hearing aids on the phone

- celebrates others' aids with pretty box for them

- still not very good with cleaning them

- doesn't know all the programs on the aid

- Hearing loss prevents me from being around children (their voices are too loud) and doesn't like to go in crowds

- don't have a cell phone because don't think can use it with aids

I would tell others- they will probably have problems adjusting at first, give up on aids and then realize they can't go without them

- you need to wear the aids to be more present with loved ones, to become part of the family, not isolated

- Hearing aids are crucial in a relationship to hear the subtleties of speech, want a smooth relationship, and want to hear jokes

### Rebecca's Story

Rebecca is a single sixty-nine year old woman with hearing loss. She is a retired mental health nurse who is an active volunteer and an avid mall walker. She has a mild sloping to moderate hearing loss.

### Meaningful Participation

Work has always meant a lot to Rebecca. She began to notice a hearing loss when she started having difficulties hearing her patients at work, *"when I knew I had a hearing loss...I was working at that point and... I had clients...I was a therapist...a mental health therapist... there are often times when people will talk very low..."* Rebecca needed to not only hear what her patients were saying but also pick up on the inflection and emotion behind what they were saying. Thus, in order to do her job well, Rebecca felt she had to hear her patients well, *"it became important for me to be able to help people well...for me to do that.... as a nurse, I got thinking about how best to serve others, and that meant I better well increase my hearing..."* Unfortunately individuals with mental health issues speak quietly and due to the intimate nature of their stories it is difficult for Rebecca to ask them speak up.

*you now...I was a mental health counselor...and I had my own office...but people used to sit in a big easy chair...which also brought them a bit of a distance from me...and of course...mental health patients...grieving patients, or people who are depressed... lower their voices down and their heads go down...and...they...they...I'd lose half a sentence...it was difficult...so I would move closer to them, but then the proximity...I thought is this uncomfortable for them?*

Rebecca's difficulty hearing was preventing her from being able to fully interact and participate with her patients. She felt it was her responsibility to hear her patient's troubles and provide them with advice.

*because of the importance of being...accurate...and...efficient...at your job...see, you know...I was working in group at well, and constantly having to say can you please speak up, I have a hearing deficit...this is a modern age, you shouldn't have to ask mental health patients to speak up about very person things...then you have a responsibility to hear clearly...*

Rebecca felt her deficit was preventing her from doing her job to her full potential, *"probably...because...doing...a good job was really important to me as a nurse..."*

Rebecca did not want anything to prevent her from being able to help her patients so she decided that she needed to improve her hearing. Thus Rebecca got her hearing tested and then immediately afterwards purchased a hearing aid.

Even though she felt that the hearing aid helped her hear her patients, initially Rebecca did not wear her hearing aid much outside of work. Rebecca felt that she could ask her family and friends to repeat and speak louder, and that it was not as crucial to hear everything that they said.

*well, with the family I felt that way, but...but then...there's a very different attitude between family and clients...with family, it's ...the congeniality of the family and you take, you know, things for granted...for clients, it's a very different*

*thing...it's your job to hear them...and if you're not hearing them, then you are not performing....as you should...as a therapeutic counselor...*

It was not Rebecca's job to hear her family and friends thus, she felt comfortable enough to ask them to modify their behaviour and accommodate her. She felt that they had shared responsibility in ensuring that she heard the conversation. Rebecca's daughter knew she was having hearing problems and was not always wearing her hearing aids. Rebecca's daughter was tired of hearing her mother complain about not being able to hear others and became adamant that her mother should wear her hearing aids more frequently, "No basically, she just put her foot down and said put in the damn hearing aids! Uh...you know, she didn't say that 2 would be better, she just said mom, wear your hearing aids!" It was not until Rebecca began spending time with an interesting man and was having troubles hearing him that she began to wear her hearing aid(s) more consistently around others.

*my incentive for beginning to wear the two hearing aids...is I met a wonderful man about 3 years ago, and he has an Indian accent and he was the one that said you're not hearing and we laughed about it and I said well I do have hearing aids, I was often not wearing them...and my daughter...I was telling my daughter that between his accent and my hearing problems, that, you know, sometimes it was...and she said for god sakes mom, wear them and wear them regularly...there's no need...I felt sensitive about it...but...no...he's probably the reason why I wear them consistently now...*

While she was concerned at first with how her new man would perceive her, she started wearing her hearing aids in order to participate more fully in conversations with him.

*no, I had just met him and I wasn't terribly proud that he would see me as not hearing...it kind of made me feel old...as the relationship becomes more familiar, [man] will say do you have your hearing aid in? So we laugh.*

She finds her hearing aids helped her to develop a more intimate relationship with her man by recognizing the emotion and intonation behind his words.

*It's a lot of bother....but when I met my close friend now, who...who has an accent, it became crucial, because when you are in a relationship, there is so much more subtleties of speech, of communication and laughter and joking and sort of informal stuff that you need to hear, and people don't like to repeat funny little jokes, it's not funny when you say it the second time, and if you want to have a smooth comfortable relationship with someone close to you, you have to hear*

The hearing aids also help her to avoid miscommunication with others, which is important in a relationship.

*because I think there are so many subtleties that happen in voice intonation...and...(raises arm up and down)...and how you respond, the look on your face...and if you're not hearing...the look on your face can give a different message...to the person...*

Rebecca did not only begin to wear the hearing aids when she was out with her man, but she also began to wear them consistently when she went out of the house, "it depends on what day it is...when I'm with other people...if I'm with other people, it would...I would probably wear them..." Hearing aids help her in public because she does not need to disturb others by asking them to repeat.

*you know, once you start wearing them, you just take it for granted...you just hear...you don't question better or worse or anything else...you just take for granted that...you know if you're not missing anything, then what's the difference?...I just...I realized that...it was more comfortable because I didn't have to ask people to repeat...*

Rebecca feels that when she wears the hearing aids she does not have to worry about not hearing people anymore, she just hears them. Hearing others is a relief because it is no longer a concern that she has to worry about.

Rebecca had different motivators which all helped increase her hearing aid use.

*the daughter was influential in beginning the regular routine of wearing the hearing aids...in the initial hearing aids...the ...wearing the second hearing aid because I read that's what you should be doing ...and finding out that...they did work ok together...because the hearing in both sides is almost identical...*

Her motivator for purchasing the aids was to help her hear patients, her reason for wearing the aid more often was her daughter and the reason she bought 2 aids was that she read a pamphlet that said she would lose more hearing in her unaided ear if she did not begin to wear a hearing aid.

*I had another hearing test done, and this time...I went for two...and I did a lot of...you know, when you're sitting around in the doctor's office ...or you're watching things on the net, and you're hearing...what you're reading is if you need two, you should be wearing two, because if you're not stimulating that nerve, and... the one that's down, then you're going to get even further lost...and that scared me into making sure that I was keeping those nerves as lively as possible...that's part of the reason...*

The information Rebecca read about needing a hearing aid to avoid further degradation of the auditory nerve motivated her to getting a second hearing aid; she did not want to lose more hearing so she got the other aid.

At first Rebecca was not using her hearing aids consistently. She began using a trick to help her remember to wear her hearing aids daily.

*yeah, (chuckling)...the ...I have a mirror as I walk out the door...quite a big mirror, you know you look at yourself as you walk...and you look at yourself and you know, do you have your glasses, do you have your hearing aids...have you...did you remember to put in your top plate...whatever...it's like the soldier after the bomb went off...the...the testicles, spectacles, wallet and watch....(laughing)*

Rebecca makes sure to look in the mirror to check if all her aids are in before she goes out. On top of wearing the hearing aids, Rebecca also changes her environment to improve her ability to hear others.

*well at the front of the room, I'm hearing the person's voice naturally...I'm not trying to pick it up from a speaker...so the resonance and all the funny little things that can happen on a hearing aid...so it's not distorted...as long as.... as long as you can find room at the front...*

She makes accommodations, such as sitting at the front of a meeting room, in order for her to better participate and hear what is being said in meetings. She also realized that

without hearing her surroundings she was at a safety risk, especially when she was driving.

*but you don't realize what you're not hearing, and you put them on and all of a sudden the fans are there, and all of a sudden the.....traffic noises are there that weren't there before, and an element of safety that you're thinking, ok if you're driving, you better be hearing everything that's happening around you...*

Rebecca did not know the safety risk she was taking until she heard what she was missing with her hearing aids.

### ***Accepting Aids as Part of Getting Older***

When Rebecca first got her hearing aid she was concerned with how it would change her appearance. This concern was overridden by the fact that she needed the hearing aid to hear others.

*no even though I was having trouble, I wore them...and sometimes you're aware that they're not that attractive...when you're going out...but that doesn't seem to bother me anymore...I guess perhaps those around me are seeing more often, as you grow older, there are many more people who are...are dealing with the same things...*

As she grew older, more of her friends also began to get hearing aids and she no longer felt like an outsider. Hearing aids were now seen as just a natural progression of aging.

*I think there has to be a certain amount of relaxed acceptance that goes with that part of aging you know, it's just kind of a normal process for people to accept it and know that it's ok...you know, they're not going to live forever*

Rebecca believes that in order to accept hearing aids individuals must be able to accept that they are getting older. If individuals see hearing aids as a natural part of their aging process they may feel more comfortable about wearing them and thus may increase their hearing aid use.

*you know what's kind of cool too...because I'm ...I'm getting older as the people around me are...getting older,...and they're starting to have a residual hearing loss, and with my hearing aids I'm hearing things they're not hearing...which is kind of cool...you know...you realize that...there are... sometimes there's a certain advantages in the group now, that you are the better...you hear more than what they're hearing...and it makes a difference...*

Now because her friends are starting to get hearing loss, the hearing aids now change from being a source of stigma to becoming an asset. Those with hearing aids, who used to be the ones struggling in conversations are now better communicators than others with hearing loss. Thus, Rebecca is now one step ahead of her peers with hearing loss and feels good about it.

*yeah, once you get into...once you get into, well as you get older, it's important to do those things, because you have to, you know, remember if you have a ...if you have a dental partial you have to make sure you have that in...uh, do you have your hearing aids, do you have your glasses, have you taken your medication, all of these things become part of being able to feel like you're in control again...*

Rebecca now feels that her aids, like her glasses, help her to gain control over her failing senses. Hearing aids allow Rebecca to actively do something to improve her hearing.

The hearing aids allow Rebecca to maintain her participation in activities through helping to improve her hearing and communication abilities.

### ***Participates in Activities she Loves***

Rebecca's improved communication ability allows her to better enjoy the time she spends with her loved ones.

*I would say it was probably... one of the main things... I visited my daughter in Iowa and I have two grandsons, and they tended not to speak that clearly, and... she was talking to me about the hearing aid use, and she said mom do you realize that sometimes when you had your back to them they were talking to you and you didn't hear them... and that really hit me... when it comes to being present for those that you love and when there's a hearing aid makes a difference, as to whether you're hearing them or not hearing them, such as grandchildren, the hearing aids, no matter how sensitive you are about...*

Hearing aids allow Rebecca to be able to hear her grandchildren. Rebecca really cares about what her grandchildren have to say and the hearing aids give her the ability to give the children her full attention. In addition to increasing her ability hear her grandchildren, Rebecca's hearing aids also help her hear music.

*and, you know, I'd like... when I work around the house, I love to have music playing... music is extremely important to me, and it... makes a difference in the mood that I'm in... and I'm a walker, I'm a mall walker you know, and I realize that, you know, when I put the music on and put my headphones on, I feel alive, it's good stuff... so music... sounds affect me... both positively and negatively, so if I'm working in my condo, I want to hear the music without having to turn it up...*

Rebecca values music very much and hearing aids help her to be able to continue to enjoy it. Without hearing aids she would not be able to experience all the emotional and psychological benefits that music has to offer her.

### ***Helping Others with Hearing Loss***

Rebecca's adjustment to hearing aid use has not been easy. Now Rebecca uses her experiences to help others with hearing aids.

*you know, I think, because I'm a nurse, I'm... I'm realizing when people around me are not hearing, and I wanted to move towards them and say, I recognize you're having a problem, and share with them... because I know how it felt at that time... because you feel; isolated... if you're sitting around the table and people are having conversation, and... and if you ask a direct question, and you notice the person will say, oh yeah, mmmm, yeah... you know they're not hearing, because you've asked them directly to respond to a question, and you know that they're fluffing, they're just trying to pretend they're hearing...*

She identifies with others with hearing loss and relates to the difficulties they are having with their hearing aids. Rebecca believes that if she shares her experience with others with hearing loss she might be able to help them to avoid making the same mistakes that she did.

*I work with seniors over at [nursing] home right now, and I'm working with a senior right now who has lost her hearing aid three times... and she keeps taking*

*them out and wrapping them in Kleenex...she thinks they look ugly, so she puts them in Kleenex...and of course, the staff come in they clear away the Kleenex...so, I was talking to her the other day, and we actually made a box for her to put her hearing aids in and decorated and kind of celebrated it rather than trying to hide it, and now it's part of the conversation, so that you know, she'll laugh about it now...she's got brand new ones now, and this time they're behind the ear rather than....so it's a little late in life for her to be learning to schedule this importance, you know she's doing it...she's admitting that she needs both hearing aids and so you find yourself teaching them at this point...*

While Rebecca is no longer working as a nurse she continues to care for others through volunteering with older individuals at a nursing home. She teaches them that hearing aids should be celebrated instead of hidden, which helps them to get over the stigma of hearing aids and to wear them more. She also helps the individuals she cares for to see that they need the aids to communicate with others.

*when she doesn't have her hearing aids in it's quite difficult to communicate with her...I can tell when she's not hearing...she's better with them than without them...and if I can help her retain them by giving her a method, then well...*

She can see the problems that the lady is having communicating without hearing aids so is trying to help promote the aids and making it more appealing for her to use them.

Some advice that Rebecca has for others with hearing loss includes sharing with others that they need to hear in order to remain in touch with their friends and family.

*I say I understand, I know how it feels...however, um, we need you to wear them to be more present with us...if it's someone in the family, um, they need to know that to be part of the family, we need you to hear, otherwise, you become isolated, you become left out of conversations, people begin to softly laugh about your inability to hear...even though you don't realize it, we need you to do it, because we need you*

Rebecca wants individuals with hearing loss to know that by wearing the hearing aid it helps them to connect with others. This connection is dynamic, and is not only important for the hearing impaired individual but also helps their friends and family to retain that closeness with the hearing impaired person, "that's how they're feeling...my kids...when I got the hearing aids, were all congratulatory...they were saying way to go mom...they were...very encouraging..." Her kids were very happy that she got the hearing aids so that Rebecca would not have to struggle as much to communicate with them. Rebecca sympathizes with other hearing impaired individuals and realizes that hearing aids are difficult to get used to, "there's a price to pay, but the price of being able to stay with people in a normal hearing world is worth it..." Rebecca emphasizes the fact that hearing aids are worth the trouble because they allow individuals with hearing loss to hear many wonderful sounds that they do not realize they are missing.

*that...that initially, they...I predict that you won't...that you'll have trouble accepting them, and there'll be a time that you will be frustrated with them and you'll say ...to heck with it...and then you will go without them, then you'll realize I can't go without them...now that I've had them, I can't go without them...and you begin to pay the price that it takes to be a good hearing aid wearer because it's worth it...I would tell them that you're not aware of what you're not hearing,*



*you're not aware of birds singing, you're not aware of a child's softer voice, you're not....you think you're hearing everything, but you're not...*

Many people change their lifestyles because they can no longer enjoy being in social situations due to difficulties hearing. Rebecca believes that individuals should not settle for this change in lifestyle and should instead do something to help improve their hearing, "I think it makes a difference in your quality of life and whether you choose to be a social person or a person alone...it's more comfortable being alone..." Rebecca points out that it may be easier to be alone and not have to worry about frustrations and stress of hearing others but she believes that being able to maintain relationships and keep connected with loved ones really makes a difference in one's life.

### Barriers

Rebecca's hearing loss is a barrier to her participation in conversations with others. At first Rebecca denied that it was a problem of her own that was the causing her communication difficulties, "*denial at first...denial that it was not me...that it was not hearing ...but it was they that were not speaking well...*" She tried to make up for her difficulties by trying to get her patients to speak up.

*I felt you know, frustrated...I felt inadequate...irritated sometimes...sometimes when you will say to a ...if you're doing one on one counseling...if you say you know I'm having problems hearing you and so they bring up their voice initially, but as they begin to tell their story, their voice goes down and down and down...and then....you would remind them again, and the voice would come up and then down...so you would get a little bit irritated with people that they're not consistently remembering...but I can understand too, because their into their own space...that's how they're feeling...*

While Rebecca understood that her patients were focused on their own issues, Rebecca just wished that they could do this little thing for her. Their inability to grant her that help frustrated Rebecca. Rebecca's daughter heard all her difficulties and pointed out that she should consider getting her hearing checked.

*well it was fine that she mentioned, it...you don't, when you don't hear something, you don't realize you don't hear it, unless someone close to you says to you, do you hear that? You're missing something...and even though it's said out of care, it's still a child correcting a mother, and you have to get your head in the right space and say thank you.*

Rebecca cared about what her daughter said, but it was hard for her to take. She was not ready for a role reversal with her daughter being the one to advise her about her health.

One of the main barriers that prevented Rebecca from using her hearing aid consistently was that she did not feel that they were a necessity. At first Rebecca felt her hearing loss was minor and did not need treatment.

*I guess I was indifferent about wearing them...I'm not a very organized person and at that point I would often just walk out without it and think ah! And because it was...not a major hearing loss, you would, say, remember your glasses, and I often walked out without it...and it's not that I chose to, it's just I didn't remember...*

Rebecca is still not in a routine to put in her hearing aids at home; she puts them in if she is going out. She needs to plan ahead and consciously think about it in order to remember to put her hearing aids in. Thus before she developed a reminder system Rebecca would often run out of the house not even thinking of the hearing aids.

*and my hearing is not that dramatically down...it was just the subtleties that I was missing...so not like that...I was extremely deaf or anything...even today, if I happen to forget my hearing aids...people do not know that I wear hearing aids, but I know that I'm not hearing ...but in a regular situation...my hearing loss is not that dramatic that it would be blatant that I could not hear...*

She feels that others do not notice her loss when she is not wearing her hearing aids; that she catches most of the information without them. Rebecca did not notice a large difference between amplified and unamplified sound at first and did not feel that she needed the aids, "I'm widowed so...at that point, I was living alone and I really didn't have to worry about how loud the TV is...except when my kids visited..." She did not feel that her hearing loss was bothering others when she was at home alone so she did not feel that she needed to wear the aids at home.

*it's interesting...there are certain things you do as a nurse...I needed to do it for my clients, there was no question about that-my clients needed it, so I needed to do it...but there are certain things that you'll think if you're just doing it for yourself, then you think uh, is it worth it? It's a lot of bother*

Thus, Rebecca finds her hearing aids very beneficial when she is with others but when she is alone she feels they are not worth the effort.

*because you don't...if you're in your own environment and you've turned the sounds up...you're not having any difficulty hearing anything...and you know, you throw on a coat and away you go...and you realize oh my god I've gone out without them on*

She feels that she can change her home environment so it does not matter if she is wearing her hearing aids or not. Now that she is used to the hearing aids she feels that she cannot live without them in public. However, if she did not need the aids for work she thinks she might not have got them in the first place.

*Now...as you put it, now that I've got them, I wouldn't do without them...however, if I did not have a hearing loss until long after I retired, it would have taken me much longer to get the hearing aids... because of...the importance of being...accurate...and...efficient...at your job...see, you know...I was working in group at well, and constantly having to say can you please speak up, I have a hearing deficit...this is a modern age, you shouldn't have to ask mental health patients to speak up about very person things...then you have a responsibility to hear clearly...*

Rebecca feels that if she acquired her hearing loss after she retired it would have taken a lot longer to get the hearing aids. She believes she would not have been as motivated to do something about her hearing loss because it would not have been as crucial for her to hear others.

*well, I wouldn't say it's not...I would have less awareness...the fact that I wear them now, I would not ever go without them...I got them earlier...and maybe people who are already retired before they hear...before they realize they have a hearing loss...would take them longer...*

She feels that she would not have noticed her loss as much with family and friends so it would have taken her longer to become aware of the loss and realize that she needed aids.

### ***Stigma of Hearing Aids***

At first Rebecca had an issue with the appearance of hearing aids. She remembered the ugly aids that her grandfather wore, *"I guess I must have been...8, 9, 10, ...of course at that age, he looked as though he was ancient...and everything...he had very large hearing aids...that was the first thing you saw before you saw grandfather."* Rebecca thought her grandfather's aids were very noticeable and they made him seem very old, *"well I suppose I remembered the ugliness of very early hearing aids...so...and it was...I realized that I'm starting to go down the path of grandpa...makes you feel older."* Rebecca did not want others to see her the way she saw her grandfather, thus she got smaller hearing aids even though she does not feel they work as well. Taking out a type of aid at night also makes her feel older, *"there is ...sometimes the embarrassment of...having to take out and put something in a box when you go to bed at night...which sounds very elderly..."* Rebecca does not want to be perceived as elderly so she does not want hearing aids to be the first thing others notice when they first meet her, *"maybe initially...most people know I have them...I don't....I don't think they think about them and I don't think about them...but when you first meet someone, and...you wonder if they have noticed them..."* Rebecca does not want to be reduced to a hearing impaired person when others met her socially. However, she does not mind the appearance of her hearing aids at work because they show off her vulnerabilities to others with handicaps. Rebecca felt that this helped her patients relate to her and helped gain trust with her. Socially, she does not want these vulnerabilities advertised and tries to cover up her hearing aids.

*also aesthetically, I don't wear fancy earrings anymore, because I don't like to bring attention to my ears...I wear plain earrings, but I don't...or very rarely wear something big and shiny on my ears...I used to wear wild earrings...*

Thus, the hearing aids prevent her from wearing jewelry that makes her feel good about herself.

### ***Difficulties Meeting the Expectations of Others***

Rebecca does not want to be treated differently because she wears hearing aids.

*we had a retirement party for a good friend...and when I was at the party, I realized that one person was continually coming in front of me and speaking very loud...and I thought what the heck's going on here? And then I realized that she knew I was wearing a hearing aid...but you know, if someone wears glasses you don't bring things up close to them (gestures by pushing hand in interviewer's face)...why would you want to yell at someone with a hearing aid? I just thought that's rather strange...*

She did not appreciate that the other lady was yelling at her because she had hearing aids. This yelling brought attention to her hearing loss and made Rebecca uncomfortable. Rebecca wishes others knew how to interact better with her.

**Difficulties with Expectations**

Rebecca felt that her hearing aids failed to meet her initial expectations.

*I expected I'd be able to hear socially better, I expected that I'd be able to hear my clients better...and I do, except sometimes it's at the price of my discomfort...there's a price to pay for what you get...because there's maintenance which is a pain in the bum, there's a hyper-sensitivity to some loud noises which can be painful.*

Even now she feels that the aids give her more discomfort than benefit in some situations. Sometimes she feels the benefits are not worth the costs. She was not expecting hearing aids to cost as much as they do, "I guess it was a surprise to me how much it was going to cost...I can't say I put it off...I just...ok I need them, it's like getting glasses...I was surprised they were that expensive..." She feels that she initially had a lot to learn about her hearing aids and could have used more guidance or advice from her audiologist and friends.

*there are other things you have to get used to too, initially no one tells you that...when you are combing your hair and getting your hair like it, you really shouldn't have your hearing aids in, because you're spraying your hair, and you learn that there's a time when you put them in...so that you're not injuring them...*

Rebecca feels that she needed to change her behaviour slightly to accommodate her hearing aids. She learned from trial and error how to best use the aid, "no, that would be me! It took a while before that learning curve..." It took Rebecca a fair bit of time to adjust to her hearing aids. She went from only wearing one aid at work to wearing her two aids consistently when she goes out.

*it's difficult...and you get used to it and you'll step into the shower and turn the shower on and then all of a sudden, oh, and you have to...take them out and put them outside...just becomes part of...that body awareness, your body begins to accept them...and they become part of who you are...*

While it was good that Rebecca was getting used to her aids, at times she forgot she was wearing them and exposed them to water. This may have damaged her hearing aids.

**Frustrations**

Rebecca's hearing aids, like most hearing aids, are not perfect. Rebecca had many issues that made her hesitant to wear the aids consistently.

*they're not always the most comfortable things to wear, but I remember walking down the street after I first got them and the wind was blowing, and I thought this is ridiculous, there's just no way that I can tolerate stuff like this...and....so there were many reasons why I chose not to wear them at first in both ears...I could lose them...I've lost...I've had a replacement...the battery goes dead and starts beeping in your ear at a party, you take it out and put it in your pocket...and then of course you forget, and ...they're easily lost...and there are times that I've felt that I'm...they weren't...tuned correctly to...there were areas that I was not hearing in, and I thought...and I remember going back and asking them to re-check them, and there was a different fellow down there who had...worked for the woman who originally taught me, and he...he just....said oh well, fine wear them, we'll just up them here and up them there and what not...and I almost told him to put them higher than what was even comfortable*

*for me, because I was so frustrated by the fact that in some situations it was inadequate ...but I found they were really calibrated badly and that I...even though he upped it, I could not hear because of the case....*

Rebecca was unhappy with her hearing aid settings, heard unwanted sounds, was very frustrated with the aids in noise, was worried about losing her aids and found them annoying when the battery was running out.

*I don't know why, but when this one needs a new battery...it will go beep...and then it will go beep again...so it gives you time to excuse yourself and go to the washroom and do it there...but this one doesn't...once it starts going it's non stop...and it's embarrassing...and it hurts*

When the battery is dying it can be very irritating because it beeps constantly. It also causes pain because the beeps are too loud. This can be embarrassing because it does not give Rebecca enough time to excuse herself discretely and change the battery; she has to immediately stop what she is doing and change it. She now carries a case in her purse so she can remove her aids if the battery starts to die. Rebecca also had difficulties wearing two hearing aids at the same time.

*they told me I had loss in both ears...but it bothered me to put...it sounded like I was talking from a bottom of a well when they put both in, so I said I only want one...so that's what I went with for...I think for about over 2 years before I decided to wear two...*

She did not like the sound of her own voice when she was wearing two aids. Eventually she tried different aids and no longer has that feeling.

*one of the most irritating things for me, I've got tiny canals, and they get extremely itchy...really, really, really itchy...irritant to the point that I have to take them out and use something just to itch them, to reach in ...to take every chance...I don't know whether other people seem to find that...*

She also removed her hearing aids at times because they made her ears itchy. What is worse is that at times she found the amplification to be painful.

*there are times that...that...hearing aids can be painful...um...and it makes you feel angry at people around you...very sharp crisp noises or...I'm trying to remember where that would be, but in some situations where sudden bursts of noise come through...you know, you're (covers hands with ears)...you're hyper-reacting and it's actually painful...and people don't realize...it's one thing to feel uncomfortable because you don't hear something but it can also be very uncomfortable to be in a situation that is at a level where it's almost hurting your ears...whether that's with a video game or whether that's with some cookware clattering...or...*

Rebecca finds some sounds to be painfully loud, and causes her to blame the pain she is feeling on others who are making the sounds. She finds this overreaction embarrassing.

*I was in the pharmacy the other day and there was a man who came by who was cleaning floors, and whatever it was, I was just so angry that he was there in the middle of the day doing this, and then I realized it didn't bother anybody else around me...and I was the one...it felt like I was being attacked, because it was setting my hearing aids off...a lot of people are often not aware of the...discomfort of people wearing hearing aids can feel...in just regular, everyday situations...*

She became angry at the floor cleaner for working during the day and causing her pain. She thinks that the public should be aware of the potential pain they can cause hearing impaired individuals and that they should be more considerate.

### ***Barriers to participation with others***

Rebecca's hearing loss prevents her from participating in certain activities.

*I guess it makes me avoidant of going to a bar with a group of people...sitting around a table you now, having a drink, because all of that background noise is really uncomfortable...if we go out for dinner we find a place we can talk...*

Loud background noise can be uncomfortable for Rebecca, which makes her unable to enjoy conversations with friends. Thus she avoids going out with friends to noisy places. She also loves children but must also avoid large groups of them because they also cause her discomfort.

*I dearly love to be around children...no matter what age, I love to be around children, but the volume of children's voices is often that screaming stage they go through when they're oh 2, 2 and 1/2, 3, it's just...you know, so yeah, I move away when I feel like I would like to move forward to be closer to them, but I move back, because it's painful...I become avoidant of large groups of children, whether it's a lot of noise or not...*

While Rebecca tries to avoid certain situations because the background noise is too loud, she also has difficulties in situations because people are talking too quietly.

*I could stay with my original denial and just say people are mean because they don't speak up or people are inconsiderate because they slur their words or people are ...if they speak another language, they should learn to speak English better, but...there's also the thing that happens with a hearing... where you're talking to someone on the phone and you get the feeling they're talking too fast...and you're thinking, is it me that's not picking up, because I'm hearing them, but I'm not getting what they're saying...is that hearing or is that something else? Uh...am I not registering as quickly as I should, is that...does that have to do with age or is that just hearing? And I often struggle with that...and on the phone, particularly if you're talking with a sales person, I will become very adamant about ...I'm going to hang up unless you slow down...I'll listen to you, but I need you to speak clearly, and if you don't, you know ...I'll help you with your survey, but you must be tolerant that I can't always pick all the options and do all the things that you need...and you don't know whether it's because you're not thinking as quickly as you did when you were younger, or if the subtleties of the loss of hearing is causing you not to understand*

In situations where Rebecca has a hard time hearing others it is difficult for her to tell whether or not her hearing problems are due to the speaker or herself. She gets frustrated when people are talking soft because it prevents her from partaking in the conversation. However, Rebecca is unsure when to speak up and tell them to change the way they are talking because she does not want to make them accommodate her and blame them for the communication breakdown if it is her fault and not theirs. If she feels that she is in control of the conversation, for example with the telemarketer, she feels comfortable with making them make accommodations with her. Thus, she does not ask others for accommodation if she feels that it is her hearing that is at fault.

*quite often they have, how do you feel about TD bank services? And stuff like that...but often they're people with thick accents...or young people who are speaking very quickly...and I have come to the point where I will say I prefer not...I can probably give them a worthwhile opinion...even if you say I have a hearing deficit I need you to speak more slowly, they initially they speed up again...and....disrespectful...so that's it for me...I just say nope, get somebody else...a lot of market things are coming from India now too....east... heavy, heavy east Indian accents...I just...no way I am going to respond...particularly with a hearing problem...*

Rebecca feels that she could be helping the telemarketers but that they disrespect her when they forget to speak slower and louder so she gives up and does not talk to them. Rebecca is worried these telephone troubles with also occur with a cell phone, "well, I don't own a cell phone...and that's part of the reason..." Rebecca does not feel that she will be successful with her hearing aids. This limits her ability to contact others and denies her a safety net when she goes out.

#### **Hearing Aid/Person Interface and Relationship with Audiologist**

Rebecca is a nurse so her knowledge of health care services helped her to know who to contact when she decided to get her hearing tested, "oh I went straight...that's why I was asking people questions...because I'm a nurse, and I didn't think I had to ask a family doctor...I knew I had a problem...so I found the services..." Rebecca went to a clinic to get her hearing tested by a hearing health care professional (HHCP).

*she showed me what my hearing loss was...and...and even showed me the...the audiogram and showed me that I did have hearing loss in both, that at that point I was not open to using two....and that seemed to be fine with her...I had materials that told me that it's not a good idea if you need two, you should wear two...however, at that point I chose one...and that made sense...if I can get away with one, that's fine...but now, having worn two, I know it would have been better...but the first hearing aids I got, it sounded like I was at the bottom of a well, with that type of hearing aid...but now with the combination of this one and this one, I don't have that bottom of the well feeling...*

Rebecca listened to her instincts and chose not to follow the advice of the HHCP. Rebecca did what she thought was best for her, but now feels that it would have been better if she got two hearing aids. Rebecca ordered the one hearing aid immediately.

*I didn't know much about hearing aids at that point...it seems to be that's maybe all that was available...I can't remember why I got them...probably it was the best available...there might have been some consideration for cost...I don't think this was less expensive...but I can't remember*

Rebecca did not know much about hearing aids when she first got them so she had to trust that her HHCP would give her the best type available. Rebecca felt overwhelmed at first with all the information she received from the HHCP.

*and as time goes on...I think when you originally sit down and you're talking to a technician, you're hearing maybe...50% of what she's saying...or you're getting information over the phone and because I'm a nurse, I don't like to...say oh I don't understand that, because I should...however, from experience, you begin to ask better questions, you begin to...uh...you begin to understand that whole thing*

*better like now I don't...I know pretty much what all the settings are for and I'm very clear on how to clean them... although certainly I appreciate going back and watching her go through the whole process...but it's not...you know, it's like a good friend...as time goes on., you become much more competent in handling it...*

Initially Rebecca was hesitant to ask questions about her hearing loss and hearing aids because she felt that because she was a nurse she should be able to understand what the HHCP was talking about. Rebecca thus had to figure things out on her own, and gradually get better with the hearing aids through experience, "I would say only within the last year...that I began to switch to a second program that begins to flush out the back noise...before, I just put them in and left them that way..." Even though Rebecca has had her aid for 6 years she just started feeling comfortable enough to use the second program in the past year. Rebecca was only able to start using the other program after she felt confident about her ability to manipulate the aids in the first program. She still does not see herself as proficient in hearing aid care and maintenance.

*and taking care of hearing aids is something I'm still not extremely competent in, as far as cleaning them and ...I expect that will get better, even now...but I'm not ...I'm not a highly technical person who takes care of those things in a very ...consistent way...I know I have to get better at caring for them...but there're still subtleties about them that I still don't really know enough about*

After 6 years Rebecca still feels that she has more to learn about her hearing aids. She believes that her knowledge and skills with hearing aids will improve even more with time.

*I found that the big hearing aid that I say is most efficient...when I was wearing two of those...when I got the little tiny hearing aid I was just wearing this one...and then I decided that maybe ...I just opened the box and there it was and I thought oh, ok...and I put that one in and realized whatever it is, between the 2, I can wear both without that bottom of the well feeling...initially, 2 of the big ones was bottom of the well, big one and the little one was ok...*

While she struggled with 2 hearing aids at first, her trial and error experience has lead her to find a way for her to wear 2 hearing aids at the same time comfortably. Thus, for Rebecca, experience and perseverance with the aids has been a key factor that increased her success with the hearing aids.

Rebecca also still has faith that improvements in technology with help her receive even more benefit from her hearing aids.

*I think hearing aids can be better, I think they can...every time I hear something new has come out... I can't say as I use my different channels as much as I might...I know there are certain channels for the phone, there's another one for putting out background noise, there's another one for ...something else...but most of the time, I just do it on the one beep...rather than the 2 or 3...but uh...technology...the way it's traveling, trying to make them tinier... I think it's wonderful....*

While Rebecca is not always happy with her hearing aids and feels that she does not use the features of the hearing aid to their full capacity, she does recognize that technology is improving and becoming smaller which is more appealing to her.



Rebecca has had varied success with HHCPs.

*technicians vary... there are those who are easier to relate to than others, the fellow who turned up my hearing aids...I felt angry that he allowed me to push them up that high...and they became un-usable for me...that was not a wise man who related to me that way...other people who...and it was the family...I was the one who was angry and said these things aren't working, I need to have a higher volume, but he needed to be able to say to me, is that comfortable? Is that ...so I've returned again, and it's really good...it's really important to have a consistent hearing person, not to sort of jump around, because ...you build a relationship with the person who is doing the testing, and it becomes more comfortable ...*

Rebecca feels that increasing the volume on her aids was a mistake by the HHCP. This made Rebecca realize that she wanted a consistent HHCP so they could develop a relationship of trust and so the HHCP can get to know her needs.

*I took it in just to have her service them...and she put it on her program...and I said there's something funny on the second channel if you listen to it...so she put it on and she had wiped out the whole interior reading of it and she said I can't believe I did that...so we had to send it back to the manufacturer and she said yeah they need a specific program, and she had plugged it in to a newer program...but it turned out ok...*

This negative experience with and HHCP still stick's out in Rebecca's mind. This influenced her view of her HHCP.

### ***Looking to Other Hearing Aid Users for Advice***

Although Rebecca has been hesitant to ask her HHCP questions about her hearing aid, she is not shy to ask others about their experience with hearing aids.

*I became more aware of ...other people who were wearing hearing aids...I guess before I started wearing hearing aids, I never really thought about it much...but I began to look, to watch...and I would see different people wearing different kinds of hearing aids...and I would ask them about it...how they like theirs...you know...just personal questions...*

When she got the hearing aids she started noticing others with aids and looked to them for advice and help. Rebecca saw these hearing aid users as her peers and felt more comfortable talking to them and asking them their experiences with hearing aids.

*sometimes I was curious where they were happy getting service ...for a hearing aid and...sometimes there are competitive prices...sometimes if I recognized something that I've never seen before, I would ask about it...I saw a variety of different styles...men seemed to be less...less aware...less uptight about talking about it...they seemed to be more open...at least the ones I met... I'm just making sure I'm getting the best service possible...for me*

Rebecca asked other hearing aid owners many consumer related questions about customer service and product information including pricing. She did not know that much about hearing aids and HHCP services so she asked others to make sure she knew what to expect and to make sure that she was getting the best treatment available.

Rebecca believes that her personality has influenced her ability to adjust to her hearing aids.

*I think a lot has to do with the nature of who you are and other kind of information...I know meticulous people, who would probably be at the level I am now within 3 months...I tend to learn things the hard way...and I'm a creative artist who's mind is all over the place...*

She feels that other more detail-oriented people would have gotten used to their hearing aids much quicker than she did. She is not as dedicated to following a routine and took her longer to get used to the aids.

*I was pretty motivated, it's just...I suppose there is a certain amount of procrastination...in the effort it takes to learn to do something well...I'm not a paint by number painter, I'm a painter who...has a better final if I just let things flow...uh...that doesn't work with hearing aids...and that type of thing....they...I think for people like me, it would be better for the technician to ...have me prove that I'm capable at the time...just show me...to have me do it...*

Rebecca feels that it is just her personality to take her time learning, and go at her own pace. She really needs to be encouraged to stick with things and needs to be pushed to show her skills in order to prove to herself that she can do it. She believes that the perfect hearing aid user would be dedicated and practice with their hearing aid.

*they would read the directions, they would practice doing it...they would perhaps have the technician watch them do it, they would admit when something was not entirely clear to them, they would not make excuses or other reasons why something didn't work...they would not admit it might be because they didn't know or because they should have known but they just didn't bother...*

Rebecca believes that if others would do these things they would have a smoother adjustment to the hearing aids. She realizes that if she had done some of these things she might have adjusted quicker.

*I know what I do when I'm teaching someone how to draw out and ....and it's step by step by step by step...they're proving to you...several times over and over that they know how to do it...accurately...so you...when you walk away from them, you feel confident that they know what they are doing... they never admit they don't...*

Rebecca feels that if she was taught differently and was forced to show how she was doing with the hearing aids she might have had more success with the aids.



## Office of Research Ethics

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### Use of Human Subjects - Ethics Approval Notice

**Principal Investigator:** Dr. M.B. Jennings

**Review Number:** 13540E

**Review Level:** Expedited

**Review Date:** August 15, 2007

**Protocol Title:** Exploring hearing aid use in older adults through narratives

**Department and Institution:** Communication Sciences & Disorders, University of Western Ontario

**Sponsor:**

**Ethics Approval Date:** September 24, 2007

**Expiry Date:** August 31, 2008

**Documents Reviewed and Approved:** UWO Protocol, Letter of Information and Consent

**Documents Received for Information:**

This is to notify you that The University of Western Ontario Research Ethics Board for Health Sciences Research Involving Human Subjects (HSREB) which is organized and operates according to the Tri-Council Policy Statement: Ethical Conduct of Research Involving Humans and the Health Canada ICH Good Clinical Practice Practices: Consolidated Guidelines; and the applicable laws and regulations of Ontario has reviewed and granted approval to the above referenced study on the approval date noted above. The membership of this REB also complies with the membership requirements for REB's as defined in Division 5 of the Food and Drug Regulations.

The ethics approval for this study shall remain valid until the expiry date noted above assuming timely and acceptable responses to the HSREB's periodic requests for surveillance and monitoring information. If you require an updated approval notice prior to that time you must request it using the UWO Updated Approval Request Form.

During the course of the research, no deviations from, or changes to, the protocol or consent form may be initiated without prior written approval from the HSREB except when necessary to eliminate immediate hazards to the subject or when the change(s) involve only logistical or administrative aspects of the study (e.g. change of monitor, telephone number). Expedited review of minor change(s) in ongoing studies will be considered. Subjects must receive a copy of the signed information/consent documentation.

Investigators must promptly also report to the HSREB:

- a) changes increasing the risk to the participant(s) and/or affecting significantly the conduct of the study;
- b) all adverse and unexpected experiences or events that are both serious and unexpected;
- c) new information that may adversely affect the safety of the subjects or the conduct of the study.

If these changes/adverse events require a change to the information/consent documentation, and/or recruitment advertisement, the newly revised information/consent documentation, and/or advertisement, must be submitted to this office for approval.

Members of the HSREB who are named as investigators in research studies, or declare a conflict of interest, do not participate in discussion related to, nor vote on, such studies when they are presented to the HSREB.

Chair of HSREB: Dr. John W. McDonald

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cc: ORE File

*This is an official document. Please retain the original in your files.*