CHINESE AND WESTERN CULTURAL DIFFERENCES IN SENIORS' ATTITUDES AND BELIEFS CONCERNING HEARING LOSS AND RELATED COPING STRATEGIES

by

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B.A., The University of British Columbia, 2003

A THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF SCIENCE

in

THE FACULTY OF GRADUATE STUDIES

(Audiology and Speech Sciences)

THE UNIVERSITY OF BRITISH COLUMBIA

April 2006

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Abstract

Previous research on the psychosocial aspects of the hard-of-hearing populations and cross-cultural studies in other health areas suggested that differences are likely to exist in the ways the Chinese and Western societies view the issues surrounding hearing impairment; however, no previous research has been done to directly compare these two cultures’ attitudes towards hearing loss. Hence, the present study provided exploratory data and analyses to address the question whether Chinese and Western elderly differ in their attitudes and beliefs regarding aspects of hearing loss and related coping strategies in order to help inform best practices in audiology and generate hypotheses for future research.

Questionnaire data were obtained from 30 elderly Chinese-Canadians and 30 elderly Euro-Canadians. A subgroup of participants from each cultural group also attended a follow-up interview, where each interviewee was given an opportunity to express the rationales behind choosing a certain level of agreement for a selected subset of items in the questionnaire. Analysis results of the questionnaire data revealed that there were significant / marginally significant mean rating differences between the Chinese and the Western cultural groups for six of the 21 items, and marginally significant differences between the Chinese and the Western subgroups who reported hearing loss were found for two of the 28 items. Results from the compilation of interview data generally supported those obtained from the questionnaire data. However, the interview results also revealed more divergence in the patterns of response between the two cultures where statistical tests failed to find a significant difference and discovered that interviewees from the two cultural groups presented markedly different conceptualizations of several key words used in the questionnaire.

In summary, the results of the present study provided partial support for the following hypotheses: Chinese and Western seniors differ in their opinions about 1) the causes of hearing loss and the degree of control they have over its development; 2) factors that might constitute obstacles to using hearing aids; and 3) the helpfulness of family members and the necessity of seeking professional attention in dealing with hearing loss.
Table of Contents

Abstract .................................................................................................................. ii
Table of Contents ................................................................................................... iii
List of Tables .......................................................................................................... vi
Acknowledgments .................................................................................................. vii

Chapter One: Literature Review and Research Questions ......................... 1
  Culture as Context of Health Behaviours ......................................................... 4
  Overview of Chinese Culture ........................................................................... 8
    Social and Interpersonal Characteristics in Chinese Culture ....................... 9
    Traditional Chinese Attitudes Towards Diseases and Health Care ........... 12
  Attitudes Towards Hearing Impairment in Chinese and Western Communities ... 15
    Hearing Loss in the Chinese Population ....................................................... 15
  Attitudes Towards Hearing Loss and Hearing Aids in Western Societies ...... 20
  Implications of the Literature on Western Culture and Hearing Impairment .. 29
  Studies of Chinese Versus Western Attitudes in Other Health Areas .......... 30
    Speech-Language Pathology ................................................................. 31
    Dentistry ................................................................................................. 34
    Optometry ............................................................................................... 35
    Cardiology ................................................................................................. 36
  Insights From Reviewing Research Findings From Other Health Areas ....... 38
  Summary: Aspects of Chinese Culture Pertinent to Hearing Impairment ...... 39
  Research Questions and Hypotheses ............................................................... 41

Chapter Two: Methods ......................................................................................... 44
  Research Instruments ....................................................................................... 44
    The Questionnaire ....................................................................................... 44
    The Interview Script .................................................................................... 48
  Research Participants ....................................................................................... 50
    Inclusion Criteria ......................................................................................... 50
    Recruitment Processes .................................................................................. 51
    Participant Characteristics .......................................................................... 52
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Survey Procedures</td>
<td>56</td>
</tr>
<tr>
<td>Data Analysis Procedures</td>
<td>57</td>
</tr>
<tr>
<td>The Quantitative Data</td>
<td>57</td>
</tr>
<tr>
<td>The Qualitative Data</td>
<td>59</td>
</tr>
<tr>
<td>Chapter Three: Questionnaire Results</td>
<td>61</td>
</tr>
<tr>
<td>Chinese vs. Western I: All Participants</td>
<td>62</td>
</tr>
<tr>
<td>Chinese vs. Western II: Those Who Reported Hearing Loss</td>
<td>67</td>
</tr>
<tr>
<td>Homogeneity of Experimental Groups</td>
<td>71</td>
</tr>
<tr>
<td>Summary of Responses to Items #29, #30, and #31</td>
<td>75</td>
</tr>
<tr>
<td>Chapter Four: Interview Results</td>
<td>76</td>
</tr>
<tr>
<td>Interview Summaries</td>
<td>78</td>
</tr>
<tr>
<td>Item #30: The Role of Audiologists and Other Hearing Care Professionals</td>
<td>78</td>
</tr>
<tr>
<td>Item #31: Where Can You Buy a Hearing Aid?</td>
<td>79</td>
</tr>
<tr>
<td>Item #9: The Relationship between Past Careers and Presbycusis</td>
<td>81</td>
</tr>
<tr>
<td>Item #12: Is Hearing Loss a Health Problem?</td>
<td>82</td>
</tr>
<tr>
<td>Item #13: The Relationship between Diet Patterns and Presbycusis</td>
<td>84</td>
</tr>
<tr>
<td>Item #10: Disclose Hearing Problems to Non-Family Members or Not?</td>
<td>84</td>
</tr>
<tr>
<td>Item #18: Would Hard-of-Hearing Seniors Lose Respect?</td>
<td>86</td>
</tr>
<tr>
<td>Item #22: Changing Diet and/or Lifestyle Can Help With Hearing Loss?</td>
<td>87</td>
</tr>
<tr>
<td>Item #23: Consulting a Medical Doctor for Hearing-Impaired Patients</td>
<td>88</td>
</tr>
<tr>
<td>Item #25: Regarding Hearing-Impaired Children Who Do Well at School</td>
<td>89</td>
</tr>
<tr>
<td>Item #26: Hearing Aids vs. Alternative Therapeutic Methods</td>
<td>90</td>
</tr>
<tr>
<td>Item #28: Family Members vs. Rehabilitation Clinicians</td>
<td>91</td>
</tr>
<tr>
<td>Item #20: Are Hearing Aids Very Expensive?</td>
<td>93</td>
</tr>
<tr>
<td>Items #24 and #37: Do Hearing Aids Really Help People Hear Better?</td>
<td>94</td>
</tr>
<tr>
<td>Item #33: The Smaller the Hearing Aids, the More Appealing?</td>
<td>96</td>
</tr>
<tr>
<td>Items #14 and #36: Stigmatization Associated With Hearing Impairment</td>
<td>97</td>
</tr>
<tr>
<td>Summary: The Interview Versus the Questionnaire</td>
<td>98</td>
</tr>
<tr>
<td>Chapter Five: Discussion</td>
<td>101</td>
</tr>
<tr>
<td>Review of the Research Questions</td>
<td>101</td>
</tr>
<tr>
<td>Reported Hearing Loss, Audiologists, and Hearing Aids</td>
<td>103</td>
</tr>
<tr>
<td>Perceiving Hearing Impairment (#29)</td>
<td>103</td>
</tr>
<tr>
<td>Who Are Audiologists? (#30)</td>
<td>106</td>
</tr>
</tbody>
</table>
Prior Experience With Aural Amplification (#31) ....................... 107
Summary ................................................................. 108
General Attitudes and Beliefs About Hearing Loss ...................... 109
Past Occupations and Hearing Impairment (#9) ......................... 110
Getting Old Equals Hearing Loss? (#15) ................................ 111
Is Hearing Loss a Health Problem? (#12) ............................... 112
Past Diet Patterns and Hearing Impairment (#13) ....................... 114
Summary ...................................................................... 115
General Attitudes and Beliefs About Coping Strategies .............. 116
Perceived Benefits of Aural Amplification (#21 and #24) .......... 116
The Way of Moderation (#27) .............................................. 118
Family Members vs. Professional Clinicians (#28) ..................... 119
Improvement from Diet AND Lifestyle Changes? (#22) .......... 121
Summary ...................................................................... 122
Participants With Self-reported Hearing Loss ......................... 122
Summary and Implications for Clinical Practice ....................... 124
Possibilities for Future Studies .............................................. 127
Caveats to Interpreting the Results of the Current Study ........... 127
Similarities between the Two Cultures .................................... 129
Future Directions ............................................................. 129

References ........................................................................ 131
Appendix A: The English Questionnaire ................................. 137
Appendix B: The Chinese Questionnaire ................................. 142
Appendix C: The Interview Script .......................................... 147
Appendix D: Complete Tables of t-Test Results ....................... 149
UBC Behavioural Research Ethics Board Certificate of Approval ... 151
List of Tables

Table 2.1: Description of Chinese-Canadian Participants .............................................. 53
Table 2.2: Description of Euro-Canadian Participants .................................................. 55
Table 3.1: Mean Rating and Standard Deviation for All Chinese-Canadian and
Euro-Canadian Participants’ Responses to Questionnaire Items #8 - #28 .......... 63
Table 3.2: Independent Samples t-Test Results Comparing Chinese-Canadian and
Euro-Canadian Participants’ Responses to Items #8 - #28 for Which There Was a
Significant Difference .................................................................................................. 65
Table 3.3: Ranking and Significance of t-Test p-Values According to Holm’s Method for
Comparisons Between the Chinese and Western Cultural Groups ...................... 66
Table 3.4: Mean Rating and Standard Deviation for Responses to Items #8 - #28,
#32 - #38 by Chinese-Canadian and Euro-Canadian Participants Who Reported Hearing
Loss (HL) ....................................................................................................................... 68
Table 3.5: Independent Samples t-Test Results Comparing Responses to Items #8 - #28,
#32 - #38 for Which There Was a Significant Difference, by Chinese-Canadian and
Euro-Canadian Participants Who Reported Hearing Loss ................................. 70
Table 3.6: Ranking and Significance of t-Test p-Values According to Holm’s Method for
Comparisons Between the Chinese and Western Cultural Subgroups with Reported
Hearing Loss .................................................................................................................. 70
Table 3.7: Summary Statistics of All Chinese-Canadian and Euro-Canadian Participants’
Responses to Questionnaire Items #29 - #31 ............................................................. 75
Table 4.1: Overview of Key Characteristics of the Interviewees from Both Cultural
Groups .............................................................................................................................. 77
Table D.1: Complete Independent Samples t-Test Results Comparing Chinese-Canadian
and Euro-Canadian Participants’ Responses to Items #8 - #28 ......................... 149
Table D.2: Complete Independent Samples t-Test Results Comparing Responses to Items
#8 - #28, #32 - #38 by Chinese-Canadian and Euro-Canadian Participants Who
Reported Hearing Loss .............................................................................................. 150
Acknowledgments

I am very grateful for a number of people who helped me during this incredible journey of completing my Master’s thesis:

First and foremost, I would like to thank my thesis supervisor, Carolyn Johnson, for tirelessly walking me through every stage of this endeavour with her kind support, thoughtful guidance, and gracious encouragement. From the role model she set with years of experience as a researcher and an educator, I have come to understand the meaning of being a “scholar.” Jeff Small contributed tremendously in providing insightful feedback for my thesis as well as helping me design a quality questionnaire and choose the appropriate statistical tests for my analysis. Sharon Adelman pointed out useful references and contact persons and also provided invaluable comments to the final draft of the thesis. Special thanks go to Judith Johnston, whose research has inspired me greatly and who helped me formulate the topic of my project, and Sue Bryant and Isla Smith, who were always there to help me deal with any administrative matters and sort out the printing problems.

I would also like to thank so many of my friends, near and far, for their blessings and prayers as well as for providing timely assistance in the data collection process. In particular, I am thankful for Victor Pai and Jasper Song, who assisted me in the back translation of the Chinese questionnaire; Amanda Chiang, Kevin Huang, and Ying Yip, who interpreted for me when I administered some of the questionnaires and interviews; and Lydia Li, Elizabeth Sung, and the staff at Chinese Christian Mission, who helped me distribute the questionnaire forms to many eligible participants. Of course, much hearty appreciation goes to my own family: Mom (who also helped me transcribe a portion of the interview data), Dad, and Aries “the duckling,” for always believing in me and supplying the resources I need to complete my education.

Finally, I would like to thank Jesus Christ my Lord for being a constant source of love, joy, strength, and wisdom.
Chapter One
Literature Review and Research Questions

It is well known that the majority of individuals over the age of 65 suffer from one or more chronic health conditions. According to Weinstein (2002), hearing impairment is the third most prevalent chronic health condition experienced by this age group, falling only after arthritis and hypertension, and by the year 2050, approximately 60% of the elderly population is projected to report a hearing problem. Furthermore, for senior people, hearing impairment is often not a stand-alone problem; communication difficulties due to a loss of hearing can amplify the effects of various forms of physical and cognitive decline associated with the aging process on the seniors’ daily lives, and the converse is also true. As the baby boomers move into their retirement years, Canada, like most other first-world nations, must be prepared to deal with the issues associated with an aging population. A report published by the Canadian Medical Association gives us a good idea of this trend: whereas the percentage of the elderly population (65 years and over) in Canada was 11.7% in 1991, it is estimated to increase to 14.1% in 2011, with a dramatic leap to 22% by the year 2031 (Rosenberg & Moore, 1997). The most recent census by Statistics Canada (2005a) reports that currently, those people who are 65 years and older constitute 13% of Canada’s total population.

In addition, in countries like Canada, where diverse population is a norm and multiculturalism is valued, there is a major challenge awaiting any audiologists who are committed to providing the best service for this growing population of hearing-impaired
seniors: dealing with clients from multiple cultural backgrounds completely different from those of the clinicians. This challenge partly reflects the phenomenon that most speech-language and hearing specialists trained in North America have traditionally come from European backgrounds, as Battle (2002) reported “less than 5% of the members of the ASHA [American Speech-language and Hearing Association] identify themselves as nonwhite” (p. 26). Therefore, to address this challenge, it is crucial to understand how non-Western cultural groups view hearing disorders, amplification devices, aural rehabilitation, etc., in order to tailor the conventional hearing care procedures to better serve the needs of individuals from minority ethnic groups.

One of the major non-Western ethnic groups in Canada is the constantly growing Chinese population, which is the focus of the present study. Reports of population demographics published by both the federal and provincial governments give us a good picture of the number of Chinese people in this country. According to the most currently reported census data, there are a total of 29,639,035 people living in Canada, of which 1,029,395 (3.5% of the nation) are Chinese, the greatest visible minority population group in Canada (Statistics Canada, 2005b). Moreover, the census data also indicate that, of all the Chinese minority population in Canada, 65,000 (6.3% of all Chinese) are 65 to 74 years old, and 36,810 (3.6% of all Chinese) are 75 and over (Statistics Canada, 2005c). The Province of British Columbia (BC) has a population of 3,868,875 people, of which 365,485 (9.5% of the province) are Chinese (Statistics Canada, 2005b). The Greater Vancouver Metropolitan Area alone has a population of 1,967,480 people, of which 342,665 (17.4% of the area) are Chinese (Statistics Canada, 2005d). The Chinese people living in the Greater Vancouver Area account for 93.8% of the total Chinese population living in BC. A recent enrollment report for the school year 2004-05 released by the BC
Ministry of Education indicates that 30.3% of all Kindergarten to Grade 12 (K-12) students in the City of Vancouver school district reported speaking Mandarin, Cantonese, or one of the other Chinese languages as the primary language at home. The presence of a large Chinese population in Vancouver makes this city an ideal location in which to conduct the present study.

As mentioned above, for audiologists to develop adequate cross-cultural competency for serving this significant ethnic group, it is necessary to first find out how Chinese people think about the nature of hearing loss, how they view people with known hearing impairment, and what their likely courses of action would be should they develop hearing loss themselves. However, to the best of my knowledge, while there are only a limited number of studies devoted to exploring Western populations’ prevailing attitudes towards hearing loss, hearing aids, and people with hearing loss, there are even fewer studies with similar topics conducted in a Chinese context, and so far no study has been done to directly compare the two cultures’ attitudes and beliefs concerning aspects of hearing impairment and aural amplification.

There are two main reasons I chose to focus only on the 65-and-over population in this cross-cultural study of attitudes about hearing loss and its remediation. First, as mentioned in the opening paragraph, the elderly population is generally more prone to develop and suffer from hearing impairment. Second, since attitudes towards health-seeking behaviours are heavily influenced by one’s cultural background (a point that will be discussed in detail in the next section), and since in a minority population elderly persons are always more likely than the younger generations to retain the cultural values of their country of origin, the seniors from any minority group can be expected to hold beliefs that are more different from those in the mainstream culture.
The main purpose of the current study is to provide a starting point for subsequent exploration in areas of attitudinal differences that may exist between the elderly Chinese- and Euro-Canadian populations regarding hearing impairment and related coping strategies. It is my hope that the results of this study will not only provide some insights to help audiologists in North America adopt a more culturally sensitive clinical approach towards their Chinese clientele, but also to encourage more future research endeavours devoted to this important topic.

The remaining portion of this chapter is a literature review on a variety of topics relevant to the present study. The review will begin with a discussion of how cultural beliefs influence health-related behaviours. Then, we turn our attention to some of the characteristics of the Chinese culture, which include how interpersonal relationships are formed and how the Chinese people traditionally think of diseases and health care practices. There is also a section that summarizes past research on attitudes towards hearing loss and aural rehabilitation within both the Chinese and Western cultural contexts. Finally, the literature review presents several Chinese-versus-Western cross-cultural studies published in other health care disciplines in an effort to delineate the most prevalent attitudinal differences between the two cultures. The research questions and hypotheses formulated for the present study are stated at the end of this chapter.

CULTURE AS CONTEXT OF HEALTH BEHAVIOURS

What is "culture"? What does culture have to do with hearing loss? These questions sound simple but are definitely nontrivial. In the words of Germain (1992), people from a certain cultural background can be distinguished by anything from their mode of dress to
their communication and social control strategies. Health care is also one aspect of the cultural characteristics, which can include “health preservation, sickness prevention, causes of sickness, treatment, coping, caring, dying, and death” (p.1). It is, therefore, important to review some of the literature that suggests that how a person reacts to a health problem (e.g., hearing loss) is ultimately related to his/her cultural background.

Over the past few decades, researchers have come to conclude that one’s cultural background plays an indispensable role in determining his/her attitudes and behaviours towards a host of health issues. In two pieces of classic literature of cultural anthropology, Kleinman (1978 and 1988) argued that a good way to understand how culture affects a given society’s medical systems is to distinguish three commonly used words: disease, illness, and sickness. Disease, as he described it, indicates the physical malfunctioning of biological and/or psychological processes, which is the perspective health care professionals usually take. Illness, on the other hand, is the “lived experience” of those pathophysiological processes by the patient, his/her family, and the wider social network. Finally, sickness is defined “as the understanding of a disorder in its generic sense across a population in relation to macrosocial (economic, political, institutional) forces” (Kleinman, 1988, p. 6). Whereas the concept of disease usually invokes the traditional biomedical model (which is relatively invariant, because it is more or less scientifically based), illness refers to patients’ experiences, which they and their families bring to an appointment with a health care professional. Therefore, illness is subject to a host of influences from the society in which the patient is born and raised, including the local cultural orientations towards health and other related issues. It is important to note at this point that the current research is not about validating Kleinman’s distinctions among these three terms, but rather to draw from the spirit of his writings that any patient’s
health-related behaviours, from maintaining personal fitness levels to initiating treatment (i.e., the *illness* aspect), are all inevitably shaped by his/her dominant cultural background. Therefore, research exploring a patient's attitudes towards a certain chronic disorder (e.g., hearing impairment) as conditioned by his/her cultural background is relevant, because it helps us understand how individuals belonging to this cultural group behave when some of them acquire this particular disorder.

Clearly, Kleinman is not the only researcher who stressed the importance of cultural factors in understanding various help-seeking behaviours related to disease and illness. Shuval (1981) suggested that cultural norms and values contribute to health-related issues in at least three ways. First, in a given society, certain health-related patterns of behaviour may be valued or discouraged depending on the definitions and priorities given by the cultural norms. Second, a health care system can also be affected by its surrounding societal value system, which often determines to what health activities and to which specific groups the available resources should be allocated. Third, as Shuval put it, “social and cultural factors are relevant not only in understanding the causes of disease but in defining what sort of phenomena are included under the category of disease and are therefore appropriate for attention by medical specialists” (p. 339). Therefore, for example, if an ethnic group with a certain cultural background commonly associates hearing loss as a purely communication disorder rather than a “health” disorder, it can be expected that the hard-of-hearing individuals in this group would not regard health care professionals as the primary help for their hearing problems and that costs related to hearing impairment would not be covered by a public health insurance program.

Other researchers such as Burkett (1991) also underscored the importance of incorporating the role of culture in our current medical model and research. He argued,
“Culture is the context which creates the possibility for the human experience of illness. Both the individual illness experience and the relationship between sick person and healer gain their meaning from the cultural context in which they occur” (p. 290). Tervalon (2003), in addition, suggested that it is a 21st-Century imperative to educate new medical students about the significant effects culture has on health. Tervalon provided some rationales as to why culture is such an important topic, including “literature indicating negative health outcomes when culture is dismissed as an influencing factor in health,” and a growing body of “evidence that increasing provider education about culture in health can contribute to reducing racial and ethnic differentials in health outcomes” (p. 571). These are just two more examples showing that, before a particular health care specialty – for example, audiological services – can reach its maximal benefit and utility, the cultural differences between the ethnic groups in the target population must first be well researched and understood.

Here is an exemplary study illustrating how contrasting cultural values embedded in the family dynamics in Chinese- and Euro-Canadian families can have a far-reaching impact on health practices in general. Anderson and Chung (1982) studied how differently Chinese and Caucasian families dealt with the long-term illness/disability of a child at home. The children involved in this study suffered from a variety of health problems, including hearing and visual impairments. The data was collected by a series of in-depth interviews with the families (seven Caucasian and six Chinese, one affected child in each family) over the course of one year. The results indicated that, whereas the Caucasian families devoted time and resources to achieve the “normalization” of their children, a consistent theme of the Chinese families was to maintain the “contentment” and “happiness” of their children, regardless what the health problem was. The authors
argued that this difference is primarily due to the fact that "Chinese families had a different world view from the white families, and most often from the health professionals who worked with them" (p. 48). The normalization process is usually considered by the generic Western culture as the best way of improving a diseased person's quality of life, because the goal is for that person to become an independent, contributing member of society to the extent possible. On the other hand, for the Chinese culture the priority is not to "regain" a normal child when the parents have already accepted that their child has some kind of long-term disability; instead, the main goal of the Chinese parents is to help the child cope and live a life that is as happy as possible. The authors concluded by saying that health practitioners need to understand the cultural values and priorities of the family before any family-based therapy prescribed for the child can be appropriate and effective. Chinese parents may fail to follow the practitioner's recommendations if they sense that the procedures involve too much discomfort for their child, which is actually an expression of the conflict in cultural priorities rather than a sign of parental negligence. In light of this study, we now turn our attention to aspects of Chinese culture as they relate to health care in general and hearing impairment in particular.

**OVERVIEW OF CHINESE CULTURE**

According to Lai and Yue (1990), the majority of the Chinese ethnic groups in Canada originated in Mainland China, Hong Kong, and Taiwan. There are also Chinese people continuously emigrating from other Southeast Asian countries including Malaysia, Singapore, Vietnam, Thailand, Brunei, Indonesia, etc. Some ancestors of Chinese-Canadians even came from places such as Fiji, Africa, and the West Indies. Although
most research has tended to focus on Chinese from Mainland China, Hong Kong, and Taiwan, the ethnic Chinese populations from other parts of the world have much in common with the former group.

The Chinese community has a relatively long history in Canada, especially in British Columbia. More than 15,000 Chinese men came as railway workers to lay down tracks for the Canadian Pacific Railway through some of the most dangerous sections in the Canadian Rockies (Lai & Yue, 1990; Lam, 2002). During the past two decades, there have been several distinct waves of Chinese immigrants from Mainland China, Hong Kong, and Taiwan, mostly due to either periods of political instability (e.g., the Mainland China’s verbal threat of military invasion against Taiwan in the mid 1990’s) or flourishing economic prosperity in those regions of the world. However, unlike their blue-collar predecessors in the 19th Century, the majority of recent Chinese immigrants are younger, middle-class professionals who are highly educated, mobile, and prefer to live in metropolitan areas (Wong, 2005). Indeed, Canada has increasingly become one of the most attractive destinations in the world for native Chinese seeking a better environment in which to work or to raise their children. As Lam (2002) noted, “from past, present, and possible future immigration patterns, the Chinese population in Canada, and specifically in Vancouver, will continue to grow” (p. 3).

Social and Interpersonal Characteristics in Chinese Culture

The social structure of the Chinese people is a typical example of a collectivistic society, in which a person’s identity is primarily defined by his/her role in the society. Whereas in Western culture, the concept of an “individual” outlines an independent entity with unique personality, free will, and emotions, the Chinese concept of “self” is formed

9
as a person establishes relationships with others in specific contexts such as work or school (Gao, 1996). According to the Confucian tradition, which is one of the fundamental philosophies of the Chinese way of life, there are five relationships that are granted special significance: “the relationships between sovereign and subject, father and son, older brother and younger brother, husband and wife, and friend and friend, with father and son being the most important” (Chao, 1994, p. 1113). Three of these five relationships normally take place in the context of a family, which “serves as the most significant and influential environment in which people learn to develop their self-concepts, to interact with others, and to conduct appropriate communication” in the Chinese culture (Gao, 1996, p. 85). Since interpersonal relationships in the Chinese culture are traditionally governed by the notion of hierarchy, the elderly members, especially the elderly males, of the family are usually given high regard and demand respect from the younger generations. However, as Lai and Yue (1990) argued, generational conflicts sometimes occur between Chinese adult children and elderly parents after they have immigrated to a non-Chinese society such as Canada. While “parents often bring with them the culture, values, and beliefs of their native lands . . . their children may have adapted to the Western way of living” (p. 76).

Besides placing emphasis and priority on one’s family, Chinese culture also makes a clear distinction between “insiders” and “outsiders.” Automatic relationships, including one’s family, relatives, classmates, coworkers, etc., and a selected group of special friendships that have developed over time through frequent interactions and mutual good feelings are considered “insiders,” whereas everyone else is considered an “outsider” (Gao, 1996). Being a minority group in an immigrant society such as the one we have in Canada, some Chinese may even extend the range of insiders to include anyone they meet
here who originated from the same place (e.g., Indonesia, Taiwan, or Singapore) as they did. As Gao described, in a collectivistic culture like that of the Chinese, the insider often enjoys special privileges and better treatment beyond an outsider’s comprehension. Furthermore, the family-based insider-outsider distinction in the Chinese culture also has other significant implications for interpersonal relationships in general. First, the Chinese sense of dependency on the family traditionally has made it difficult to initiate and develop personal relationships with strangers (i.e., outsiders). Then, if personal relationships with outsiders are to be developed, the process is usually arduous and time-consuming. However, once the relationships have been established, they tend to remain very solid for long periods of time.

Similar to other collectivistic cultures, the Chinese are often preoccupied by gaining “face” and “face-saving” strategies in most social situations, since one’s self-esteem is usually dependent on others’ remarks. Other people’s positive or negative remarks respectively increase or decrease self-esteem and, concomitantly, face. Gao (1996) pointed out that Chinese people’s need for face pervasively influences their relationships and behaviours in everyday life. First, “engaging in appropriate behaviour is of concern to most Chinese because inappropriate behaviour often results in others’ negative remarks and thus brings a loss of face to the person” (p. 95). Second, “to avoid the threat of losing face, the Chinese will not reveal their personal or family disgrace to others . . . incidents of misbehaviour or wrongdoing often are concealed” (p. 96). The pattern of face-saving strategies often includes guarded self-disclosure regarding one’s own or a family member’s chronic diseases to outsiders in fear of creating gossip that could severely damage the image (i.e., face) of one’s family. Lai and Yue (1990) also noted that, as part of a culture-mediated face management, “when dealing with conflicts, the Chinese may
traditionally be persuaded by others without asserting their own rights . . . [they] prefer to
listen to what others have to say [first] . . . they may then reply in an indirect way and try
to handle the situation diplomatically” in an attempt to evade direct confrontation (p. 77).

Traditional Chinese Attitudes Towards Diseases and Health Care

According to Lai and Yue (1990), the Chinese conceptualization of health and illness
is predominantly based on what is sometimes called “Chinese medicine,” which can be
further divided into three interrelated variants: classical Chinese medicine, Chinese folk
medicine, and medicine in contemporary China/Hong Kong/Taiwan. The roots of
classical Chinese medicine can be found in ancient Chinese texts such as The Yellow
Emperor’s Classic of Internal Medicine (Yellow Emperor is widely believed by the
Chinese to be the first emperor in prehistoric China) and Shen Nung’s Classic
Pharmacopoeia (Shen Nung is a character in classical Chinese mythology who had
personally “tasted” all of the herbs in the world and discovered their medicinal
properties). The fundamental concept of classical Chinese medicine is the complementary
forces of yin and yang, which permeate the entire universe (Ellis & Ho, 1982; Holroyd,
2002; Lai & Yue, 1990; Lam, 2002; Lee, 1986; Lim & Bishop, 2000). Whereas the
principle of yang, or the positive, male energy, represents the source of light, warmth, and
fullness, the principle of yin is the negative, female energy that represents the source of
darkness, coldness, and emptiness. A healthy person is said to reach a state of physical
and spiritual harmony with nature when the yin and yang forces are in dynamic
equilibrium. In contrast, illness represents an imbalance or disequilibrium in these two
forces. Therefore, for the classical Chinese medical approach, the emphasis is on the
balance and harmony of these energy interactions as a prerequisite for good health. The
traditional Chinese medical treatment regimens, including herbal medicine, dietary suppements, and acupuncture, are all methods "designed to restore balance and/or improve the flow of energy through the body" (Lim & Bishop, 2000, p. 967).

The tenets of Chinese folk medicine are based on many of the concepts adopted from the classical sources mentioned above, but often using different terminologies. For example, the principles of "hot" and "cold" are usually substituted for yang and yin, although Chinese folk medicine still maintains that a harmonious balance between these two opposing forces results in good health. Compared to classical Chinese medicine, the knowledge about Chinese folk medicine is much more widespread in the general Chinese public, and its practices also come in a variety of different social domains. As Lai and Yue (1990) noted, "people often rely on information about treatment obtained from newspapers, by word of mouth, and from traditions passed on down the generations, without fully understanding how the treatment works . . . religion and magic may also enter into folk medicine" (p. 78). The roles of food and diet in Chinese culture are not only as sources of nutrients or an integral part of social functions, but they are also closely associated with the ideas of Chinese folk medicine. Most Chinese, even in the educated middle-class community, believe to some extent that the intake of excessively "hot," "cold," or even "poisonous" (not biochemically poisonous as in the Western sense) food could be the cause of certain illnesses. Others may also believe that germs, fate, or bad luck could be the cause of diseases. Chinese people also have the tendency to consider themselves ill only when symptoms are apparent. Therefore, for a lot of Chinese, the primary goal of seeking medical treatment is to get rid of the symptoms as quickly as possible, rather than an attempt to remove the root cause of the disease. Another interesting observation of Chinese folk medicine is that some people "may seek cures
from substances which they associate with their own deficiency” (Lai & Yue, 1990, p. 80).
For instance, a graduate student with this belief may consume a lot of pig’s brains in the
hope of becoming smarter; a patient infected with hepatitis B may eat some animals’
livers as an important dietary supplement.

The contemporary medical discipline in present-day Chinese-controlled regions such
as Taiwan and Singapore integrates ideologies and methodologies from classical and folk
traditions as well as from modern Western and Chinese medical advances. The advantage
of this system is that treatments from either broad tradition, or both, may be employed to
serve patients’ needs. Indeed, nowadays it is not uncommon to find the following
scenario: When immigrant Chinese persons find the treatment offered in Canada
unsuccessful or unsatisfactory, they will immediately return to their homeland to seek
additional medical attention there (Lai & Yue, 1990).

Regarding the orientation of the Chinese when faced with multiple medical
treatment options, most people believe that Western biomedicine is best used with highly
infectious diseases such as SARS (Severe Acute Respiratory Syndrome) or with serious
conditions such as cancer, because it is more technically advanced and can provide
efficient relief of symptoms. Chinese medicine, on the other hand, is seen as better for
curing chronic ailments with prolonged symptoms, such as chronic coughs or intestinal
disturbances. Chinese people know that those Chinese methods work much more slowly
and are less effective than the Western alternatives, but they also believe the Chinese
methods are milder and without harmful side effects. However, when serious or
unforeseen relapses occur after administering traditional Chinese treatments, the Chinese
may revert to seeking help from physicians trained in Western medicine (Holroyd, 2002;
Lai & Yue, 1990; Lim & Bishop, 2000).
Hearing Loss in the Chinese Population

Interestingly, compared to Canada and the United States, Australia seems to have devoted more research effort looking at the differences in characteristics between hearing-impaired Chinese and people of European heritage. Azzopardi, Baker, and Hickson (1997) studied the patterns of disability and handicap from hearing impairment for the elderly non-English-speaking populations in Australia. Like Canada, Australia is increasingly becoming a multicultural society, with 17.1% of the total population aged 65 or above consisting of people from non-English-speaking backgrounds, according to 1993 data from the Australian Bureau of Statistics. Given the fact that Australia is still one of the most popular countries for immigrants today, the proportion of elderly people from non-English-speaking backgrounds is likely to be much larger by now. According to the authors, “the disability and handicap associated with a particular hearing impairment depends on the age, sex and culture as well as the social circumstances of the individual” (p. 24), and this relationship is an important subject of study because of its implications for the provision of effective audiological rehabilitation to the appropriate population.

The study included participants aged 64 to 85 years, who spoke Dutch, Polish, Greek, or Cantonese (which is one of the major Chinese languages widely spoken around the world) as their primary language at home. The result of the study confirmed a common finding that, for the participants from non-English-speaking backgrounds, hearing handicap is significantly greater when listening in English than when listening in their first language. The results also indicated that any provision of hearing aid and/or assistive listening device for the non-English-speaking elderly group might be inadequate before the
clinicians fully assess the speech comprehension ability of these individuals in their native languages.

Doyle and Wong (1996) conducted a different study looking at 49 Cantonese speakers who were residents of Australia to address a common observation that some Cantonese-speaking adults do not admit to have a hearing problem even when they fail a hearing screening. However, the down side of this study is that the investigators did not include a comparison group of English-speaking Australians, which makes it not a cross-cultural study. Nevertheless, it is still worthwhile to discuss some of the arguments that the authors provided in their paper. The results of the study supported the above-mentioned observation: Many elderly Cantonese-speaking participants appeared unconcerned about their clinically identified mild hearing losses. Those persons who reported hearing difficulties in conversations tended to have mean pure-tone thresholds at or above 45 dB HL. The authors proposed two hypotheses to explain this observed phenomenon. The first one is a linguistic hypothesis: The particular phonological structure of the Cantonese language, which lacks high-frequency grammatical morphemes but conveys much lexical meaning by low-frequency pitch variations (tones), gives a significant advantage to elderly persons with a typical presbycusis hearing loss. The second one is a cultural hypothesis: Some features of the Chinese culture (as exemplified in the environment of Hong Kong) further reduce the likelihood that individuals with hearing loss will seek help before their hearing problem effectively impedes the understanding of normal conversation in most situations. These culture-specific features of communication identified by the authors, many of which have been alluded to in the “Overview of Chinese Culture” section above, include the following:
(a) Older persons with hearing loss may communicate largely with familiar conversational partners around a familiar and restricted range of topics; (b) reduced hearing sensitivity may be seen by older persons as being part of their elderly character, rather than a problem; (c) elderly persons with hearing loss may feel able to pass the responsibility for successful conversation to communication partners; (d) many Chinese persons with hearing loss, especially those with little education, may hold concepts of health and health care in which hearing loss and assessment of hearing are irrelevant unless accompanied by other otologic symptoms and/or unless their employment is threatened. (p. 445)

The article also listed several other environmental factors present in Hong Kong that can make it even more difficult for Cantonese-speaking elderly individuals to admit hearing difficulties and to spend money on hearing aids. These factors include the following: 1) Many Cantonese speakers accept relatively loud speech as a normal way of life; 2) high ambient noise in Chinese metropolitan areas such as Hong Kong or Shanghai may result in louder speech and habituation to constant environmental noise; 3) many elderly Chinese in places such as Hong Kong have very limited disposable financial resources; and 4) although there are excellent specialized hearing aid clinics available, the majority of people in Hong Kong still perceive hearing aids as electrical devices rather than as communication or medical devices that could significantly improve a hearing-impaired person's quality of life. For future research directions, the authors suggested that further exploration of Cantonese speakers' attitudes towards hearing impairment is needed before better audiological services can be provided for this group of people.

In a subsequent Australian study, Doyle, Schaefer, Dacakis, and Wong (2002)
measured the hearing levels and degree of hearing handicap in elderly Cantonese-speaking Australians, however this time with a control group of elderly English-speaking Australians. The data was obtained using a standardized questionnaire called the Hearing Handicap Inventory for the Elderly (HHIE; Ventry & Weinstein, 1982). The results replicated those of the above study: Responses to the questionnaire indicated that the Cantonese-speaking participants were more likely than the English-speaking participants to experience fewer communication difficulties even when they had slightly poorer hearing levels. While the authors reiterated that the various linguistic and cultural aspects of the Cantonese-speaking seniors mentioned in the previous study might be the cause of this observed difference, they speculated that differences in the characteristics of Cantonese and English languages might be the most influential factor. Although the sentence-length speech spectra of Cantonese and English are very similar, the tonal differentiation of the Cantonese language carries a great deal of lexical information via low-frequency pitch changes, whereas the English language is highly dependent on a variety of high-frequency consonants to distinguish its words. Chinese languages also lack unstressed grammatical morphemes (such as prepositions and tense markings), whose existence in the English language makes comprehension difficult for hard-of-hearing speakers of English. Therefore, since a high-frequency sloping hearing loss is the most common audiometric configuration in older adults, speakers of Cantonese may have an advantage in speech comprehension due to the presence of a relatively well-preserved low-frequency sensitivity.

In another study done in Singapore, Wu, Chin, and Tong (2004) set out to examine the potential usefulness of a questionnaire the authors designed to screen for hearing loss and document elderly persons' attitudes towards hearing aid usage. Even though this
study involved hospital inpatient and outpatient participants who were selected regardless of their cultural backgrounds, since more than three quarters of Singapore’s population is Chinese (Lim & Bishop, 2000), one can infer that most of the participants in this study were Chinese as well. The authors also alluded to the fact that even the well-validated HHIE questionnaire (used in the Doyle et al., 2002 study) is not very culturally relevant to Singapore’s elderly individuals, who tend to lead a sedentary lifestyle and do not participate in many of the social activities mentioned in the HHIE. The results indicated that the single question “Do you think you have a hearing problem?” had the highest specificity (91%) but a low sensitivity of only 58% (i.e., a very low false-positive rate but a rather high false-negative rate). However, when combining this first question with the five other questions relating to the patient’s daily activities, the sensitivity of the entire questionnaire could be raised to 73% (i.e., a much lower false-negative rate). The conclusion from this finding is that, since this single question of self-perception of hearing loss appeared to have high specificity, any patient who answers this question affirmatively warrants a referral to the local audiologist for a full audiological evaluation. This study also found that, while most survey studies done in the United States reported that denial, concern about expense, and stigma/vanity were the three major reasons why some hearing-impaired elderly patients refused to use amplification, for the local elderly population in Singapore, denial and concern about expense were also the two main reasons, but stigma/vanity did not seem to be a concern. However, this particular conclusion of the article appears to be somewhat unexpected, since it was very likely that the feelings of denial experienced by those participants could be partially attributed to a perceived stigma/vanity associated with hearing aids, which the investigators did not find. Interestingly, the results also showed that, for this participant group (mostly elderly
Chinese), the objective severity of hearing impairment alone did not seem to be at all correlated with an elderly person's willingness to try hearing aids.

We will now turn our attention to the topic of how mainstream Western societies view hearing impairment and amplification in general.

Attitudes Towards Hearing Loss and Hearing Aids in Western Societies

Given that the profession of audiology and the electronic device of hearing aids were both invented in the Western world, there logically should be more past studies devoted to exploring attitudes towards hearing impairment and its treatments within the context of Western culture than those done within the context of Chinese culture. However, this body of literature concerning attitudes and beliefs about hearing loss in the Western societies is still limited compared to some other topics in the field of audiology such as etiologies of hearing loss or fitting methods of hearing aids, which have enjoyed a relatively long history of research. Furthermore, even though many studies in the available literature contain the term "attitude" as one of their key words, the majority of these studies are not relevant to the current study because their discussions of attitudes and beliefs were not representative of the general Western culture (e.g., attitudes confined to those of referring physicians or family members of the hearing-impaired individual), were not culturally motivated (e.g., differences in attitude due to variations in personality), or were focused on topics other than hearing loss and/or hearing aids (e.g., attitudes towards hearing protection in young adults). With these points in mind, the following discussion presents what researchers have found out about typical attitudes and beliefs of Westerners regarding the topics of hearing impairment and aural rehabilitation.

Studies conducted in Western societies consistently show that wearing hearing aids
as a coping strategy has beneficial effects on the health and well-being of any hard-of-hearing elderly individuals. For example, an Italian six-year longitudinal study (Appollonio, Carabellese, Frattola, & Trabucchi, 1996) involving 1140 participants showed that the use of sensory aids (i.e., eyeglasses and hearing aids) helped the elderly participants achieve higher mood level, richer social relationships, and better performance in daily activities than their peers who did not use these devices regularly. The same study also found that, after six years, the unaided male participants had a mortality rate that was significantly higher than the rest of participants. The National Council on the Aging (1999) conducted a large-scale national survey involving a total of 2,304 hearing-impaired people and an additional 2,090 family members or close friends in the United States. The results of the study suggested that those patients whose hearing loss was managed by professionals often reported better relationships with family members, increased self-esteem, improved mental health, and a greater sense of security.

Despite the many benefits associated with aural amplification, many studies in the past have pointed out the unequivocal fact that hearing aids are still grossly underutilized in the Western world, and this phenomenon can be partially attributed to the society's widespread negative attitudes towards hearing loss and hearing aids. In fact, much research that looked at attitudes towards hearing impairment in Western culture started out as an attempt to answer the question "Why are those elderly people who could benefit from hearing aids not using hearing aids?" Two classic studies conducted in the 1980's set out to address the issue of hearing aid under-usage. A study by Franks and Beckmann (1985) surveyed 100 participants aged 65 and older in cities of Eastern Washington. The results suggested that the top reasons why seniors rejected hearing aids included high cost, attracting attention to the handicap, repulsive dealer practices, amplified sound being
uncomfortable, difficulty in handling hearing aid controls, and not knowing where to purchase a hearing aid. However, the authors mentioned specifically that the word “dealer” used here did not include clinical audiologists. Moreover, since this study is more than 20 years old now, some of the dissatisfactions associated with the hearing instruments themselves might now be reduced due to recent advancement in hearing aid technology. Another classic study by Humphrey, Herbst, and Faurqi (1981) interviewed 365 participants aged 70 years and older in an attempt to explore some of the characteristics of the hard-of-hearing seniors who resisted seeking aural rehabilitation. The results indicated that the majority of elderly persons considered their hearing impairment to be a natural aspect of aging, and that a retirement lifestyle accompanied by reduced social activities further lowered the likelihood that the hard-of-hearing seniors would seek help for their hearing problems. Interestingly, the findings also suggested that many family doctors shared the view of their elderly patients that hearing loss is part of the normal aging process and that “the essentially social nature of the [hearing] disability may discourage [the family practitioners] from seeing it as a medical condition requiring attention” (p. 29). However, as this study is about 25 years old now, some of the attitudes towards hearing impairment presented therein might only reflect those of the older generation and must be interpreted with caution when applying them to elders in contemporary Western societies.

More recently, Doggett, Stein, and Gans (1998) recruited 20 elderly women with an average age of 72 years in the United States and asked them to rate aided and unaided peers after reading a passage to them. The results showed that these elderly females perceived their aided peers as significantly less confident, intelligent, and friendly than their unaided peers. Interestingly, elderly females who were unaware of the hearing aids
worn by their listeners also held the same negative perceptions towards their aided audience, which in turn suggested that a negative self-image by those participants who played the role of aided listeners might inadvertently contribute to the bias in attitudes expressed by the elderly females who judged them.

Cohen, Labadie, and Haynes (2005) employed a mail-in questionnaire to survey 85 internal medicine and family physicians in the United States and found that while 97.6% of the responding physicians recognized hearing impairment’s adverse effect on the quality of life, only 60% regularly tested patients for hearing loss. The most common reasons reported for failing to evaluate patients for hearing loss were "lack of time " and "more pressing issues." This result suggested that even in the United States today primary care physicians still do not routinely perform basic hearing assessment such as hearing screening questionnaires, tuning forks, or even the “whisper test” for their patients.

An excellent review article on presbycusis by Gates and Mills (2005) stated in its opening section that “comprehensive rehabilitation [for hearing impairment] is widely available but underused because, in part, of social attitudes that undervalue hearing, in addition to the cost and stigma of hearing aids” (p. 1111). Unfortunately, the authors did not go on to explain what exactly these social attitudes are or the potential reasons behind a society that undervalues hearing. Another review by Valla and Sweetow (2000) succinctly summarized the current issues of negative attitudes and hearing aid under-usage by describing that since Western culture today places so much emphasis on youth and youthful appearance, and since the presence of a hearing loss is often associated with an underlying message that the person is growing old and becoming a burden on society, many Western elderly persons actually make an effort to “hide” their hearing-related problems, including withdrawing from various social activities or
refusing to receive any form of aural rehabilitation (p. 567).

Cienkowski and Pimentel (2001) conducted a survey study looking at whether attitudes towards hearing impairment and its related rehabilitation strategies would be different in three distinct groups of participants: young adults with normal hearing, hearing-impaired older adults who were experienced hearing aid users, and hearing-impaired older adults who had never used hearing aids before (both groups of older adults were at or above the age of 55). Even though the authors did not specify the predominant cultural/ethnic background of these participants, because all of them were recruited at or around the University of Connecticut, one could assume that most of the participants were from the mainstream white American culture. The statistical results showed that while many of the young adults in their study would be concerned and/or embarrassed to wear a hearing aid, less than 11% of them indicated that they associated hearing impairment and/or amplification with aging or declined cognitive function. This compared to 21% and 37% of elderly hearing aid users and nonusers, respectively, who associated hearing aids with aging. Another interesting finding is that the young adults and the older adult non-hearing aid users shared the view that hearing aids are easy to adjust to and beneficial, even though neither group had actual experience with amplification. However, these results seemed to suggest an inconsistency in the young adults' reports that while most of them claimed not to hold negative perceptions of hearing aids, many young adults would be reluctant to wear hearing aids themselves, which might indicate an implicit negative perception. Furthermore, Cienkowski and Pimentel suggested that the statistics obtained from the young adults need to be taken with a grain of salt, because the opinions of this group might change over time as they grow older and acquire some personal, first-hand experience with hearing loss and/or
hearing aids. The results also indicated that the older adult hearing aid users were more likely to report the limitations of amplification; since this group had had first-hand experience, it was no surprise that they had more realistic expectations regarding hearing aids.

Another study by Jerram and Purdy (2001), conducted in Auckland, New Zealand, explored how technology and demographic factors, prefitting expectations, attitudes, and adjustment to hearing loss influence hearing aid outcome. The investigators collected questionnaires from 162 participants, with an age range of 31 to 88 years old. These 162 respondents were asked to fill out questionnaires prior to and after they were fitted with new hearing aids. Sixty-one of the participants were first-time hearing aid users, while the remaining 101 had some previous experience with amplification. Among the many results of this study, there is one finding that is of particular relevance to the current study: While much research effort has already shown that many hard-of-hearing adults in Western societies are reluctant to acknowledge their hearing difficulties in fear of the social stigmas often associated with hearing impairment, this study found that “an attitude that wearing a hearing aid is stigmatizing was not predictive of hearing aid outcome” (p. 73). For this observation, the authors offered the explanation that those individuals who accepted hearing aids had possibly also overcome the concern of stigmatization.

A Dutch study by Duijvestijn, Anteunis, Hoek, van Den Brink, Chenault, and Manni (2003) set out to investigate factors influencing help-seeking behaviours in hard-of-hearing elderly persons at or above the age of 55. In total 1419 participants with an age range of 55 to 91 years old were recruited through the help of a national driving test program, in which individuals coming for the driving test were offered the opportunity to take part in additional sight and hearing examinations. While the authors
mentioned that this recruitment method may have resulted in a sample of participants that was selectively young, healthy, and possessing certain personality traits, they made it clear that the investigation was still worthwhile, because previous research efforts have indicated that there seems to be a significant association in the elderly population between sensory deprivation and morbidity/mortality rates (as discussed above), and that hard-of-hearing individuals usually are aware of their hearing difficulties for about 10 years before they decide to buy their first hearing aid (p. 846). Moreover, the paper also reported earlier research findings indicating that there are a number of reasons why hard-of-hearing seniors are reluctant to accept hearing aids: 1) They may be afraid of modern technology and its associated high expenses; 2) they may be using alternative rehabilitation strategies rather than hearing aids; 3) they may be aware of the stigmatization of hearing impairment that exists in the Western society; or 4) they may hold some reservations about the effectiveness and cosmetic aspects of aural amplification. The authors concluded from their data that consultation with a general medical practitioner and subsequent hearing rehabilitation acquisition did not necessarily follow the participants’ first awareness of their own hearing impairment. Rather, it appeared that factors such as pressure received from significant others and a personal openness towards trying a hearing aid also contributed to a participant’s eventual consultation with a physician.

In Canada, two recent studies examined Western seniors’ attitudes towards hearing impairment as well as several aural rehabilitation strategies. Carson (2000) interviewed seven elderly women from Vancouver Island (age range: 72 to 82 years) in depth before, during, and after their first-ever audiological assessment to tap into their thoughts and feelings about the entire process. Although the author did not state explicitly the
cultural/ethnic attributes of these participants, after reading their personal life stories it had become clear that most of these elderly women, if not all, came from a typical Euro-Canadian family background. The data also include separate interviews with their family members and the assessing audiologist, observation of the hearing evaluation sessions, and journal entries by each participant. All of the data were coded and analyzed using qualitative methods. The results suggested that hard-of-hearing individuals tend to engage in a constant process of self-assessing their own hearing before, during, and after seeing the audiologist for their hearing difficulties. The results of this self-assessment of hearing conditions exert a strong influence on the patient's attitudes towards and decisions about subsequent help-seeking behaviours. One of the most significant findings of Carson's study is that among the many factors, the experience of the hearing test itself and the interaction between a hard-of-hearing elderly woman and the audiologist may be two of the most influential in determining what the patient will do next about her hearing difficulties.

Dillon Edgett (2002) also conducted an in-depth qualitative study exploring the factors that could encourage or prevent hard-of-hearing persons from seeking help in the form of small-group hearing rehabilitation sessions. In total, this study involved 20 participants recruited from the Western Institute of the Deaf and Hard-of-Hearing (WIDHH) in Vancouver, BC. All of the participants were above 18 years of age. The author claimed that this sample of participants was considered to be representative of the regular hearing-impaired clientele of WIDHH, which includes clients who come from diverse cultural backgrounds. Therefore, strictly speaking, the findings of this study would not apply to a purely Western-culture-based society, but rather it would pertain more to a population with mixed demographics similar to that of Vancouver. Several
major themes were isolated from the participants’ reactions to topics concerning attitudes

  towards hearing impairment, hard-of-hearing individuals, and aural amplification: 1) Hearing loss was often associated with reduced intelligence and poor language skills by people with normal hearing; 2) hearing loss could be mistaken for disinterest, ignorance, inattentiveness, snobbery, or even “selective hearing” by people interacting with the hearing-impaired individual; 3) hearing loss was seen by the hard-of-hearing individuals themselves and other people alike to be a normal part of growing old, and many resisted admitting to have a hearing loss because they wanted to stay “young”; 4) hearing loss was widely believed to be merely a problem with the loudness of sound, and many normal-hearing people did not seem to be able to tell the difference between being “hard-of-hearing” and being “deaf”; 5) some of the participants reported that “having a hearing loss might mean you are not a worthwhile communication partner or that communication with you is too much of a bother” (p. 152), but some of them had encountered more positive attitudes from other people; 6) several participants rejected the “big and ugly” behind-the-ear (BTE) hearing aids in favour of other smaller hearing aid models; and 7) according to accounts by the hearing-impaired participants, many normal-hearing people seemed to believe that hearing aids could completely restore someone’s hearing back to normal, and others either were ignorant about the potential benefits of hearing aids or thought that assistive listening devices such as an FM system were some sort of disguised voice-recording systems.

In addition, Dillon Edgett found that five distinct “categories” seem to emerge from the data in response to the original research question: People’s understanding of their hearing loss, their personal experience with hearing loss, the interaction between the hard-of-hearing individual and society, the efforts made in an attempt to cope with their
hearing loss, and their reflections on rehabilitation experience are all factors that could facilitate or inhibit hearing-impaired people's decision to participate in group hearing rehabilitation sessions. This study provided us with another clear example, this time from the perspective of Western culture, that people's perceptions of a certain health condition (e.g., hearing impairment) and the ways this condition and its symptoms interact with the broader society will ultimately determine the course of actions taken by the patients to deal with this condition in a "culturally acceptable" pattern.

Implications of the Literature on Western Culture and Hearing Impairment

Several common themes emerged from the results of the several studies discussed above that could be considered to represent some of the fundamental aspects of Western culture's attitudes towards hearing loss today. Specifically, these themes include the following: 1) Western elderly persons exhibit a tendency to deny the presence of their hearing loss due to the society's emphasis on youthful appearance; 2) while past research results have clearly shown that hearing aids benefit their users in many different ways (e.g., reduced mortality rate and improved quality of life), many hearing-impaired Western elderly persons are still reluctant to proceed with amplification due to subtle social stigmatization associated with hearing aids; 3) high costs, vanity issues, and perceived effectiveness of aural amplification devices are common barriers to Western seniors who are thinking about trying hearing aids; 4) pressure from family members is sometimes the reason why some Western elderly persons eventually acquire hearing aids; and 5) compared to the younger generations, older generations of Western society are more likely to believe that hearing loss is a natural part of getting old.

It is important to note that many assumptions the authors of the above studies made
when generating their research questions and designing data analysis methods might need to be modified if the study sample were to be drawn from a non-Western cultural/ethnic group (e.g., the Chinese population). For instance, while the questionnaire and the interview script used in a Western study were designed to find out whether pressure from family members is a major contributing factor in a person’s final decision to pursue hearing aids, in some non-Western cultures the family members of a hard-of-hearing individual may actually recommend against getting a hearing aid, either in fear of exposing the family “disgrace,” or because the belief that family members can really help the hearing-impaired person more than any health care professionals could. In addition, at least in the studies reviewed, while many survey questions were designed to assess the participants’ opinions about the image associated with hearing aid usage, none of the survey items dealt with opinions about the preferred method of hearing aid usage. The latter category of questions could be very relevant to some non-Western cultures, because people from these cultures may not always agree with the details of the “standard” hearing aid application recommended by most Western clinicians (e.g., advice such as “Wearing your hearing aids as much as possible is the best way to maximize the benefits of your device”). These points often taken for granted in previous research served as the basis of some of the questionnaire items developed for the present study comparing the Chinese and the Western cultures in their attitudes towards hearing impairment and aspects of aural rehabilitation.

**STUDIES OF CHINESE VERSUS WESTERN ATTITUDES IN OTHER HEALTH AREAS**

Since there is an extreme paucity of past studies looking directly at how elderly Chinese and Western participants view topics related to hearing impairment as a result of
each culture's general health beliefs, during the process of developing a survey questionnaires to be used for my study, I looked into other common health conditions where differences in attitudes between Chinese and Western groups have been investigated. The following is a summary of those studies, categorized according to their corresponding health care professions.

**Speech-Language Pathology**

It should not be surprising that the first stop to find relevant literature for the present thesis is the discipline of speech-language pathology, which, together with audiology, constitutes the science of human communication disorders. Bebout and Arthur (1992) argued that speech-language pathologists need to be aware that assessment and therapy techniques developed based on the norms of the general North American culture will not necessarily be appropriate for the client's culture, since various attitudes toward a certain disorder are likely to be determined by culture. They used a questionnaire to examine the differences in attitudes toward four speech disorders (cleft palate, severe adult stuttering, speech of the hearing-impaired, and misarticulations of older children) among 166 university students in both California and Ontario who represented English-speaking North American culture and several other cultures (i.e., Chinese, Japanese, Spanish, and Vietnamese). The authors analyzed their data using a dichotomous grouping: all of the foreign-born participants as the experimental group and all of the North-American-born participants as the control. The results suggested the presence of significant cultural differences between the two groups, especially in the following two aspects relating to speech disorders: 1) Participants born outside of North America were more likely to link emotional disturbances with speech-disordered individuals; and 2) Foreign-born
(especially Asian) participants were more likely than the control group to think that any person with a speech disorder could improve the condition if he/she would just “try harder.” However, since this study recruited only highly educated young university students as participants, and since the analyses did not look at the differences between each individual cultural group within the collective “foreign-born” group, the findings may not be representative of the more general Chinese culture, which is the main focus of the current research.

Fortunately, Bebout and Arthur (1997) did another very similar study looking at attitudes toward the same four speech disorders, this time with an experimental focus group of 60 Cantonese-speaking Chinese-Americans, the majority of whom were recent immigrants from various Asian regions, and a comparison group of 46 non-Chinese Americans, the majority of whom spoke no other language besides English at home. This time the participant age range was much wider (from 17 to 71 years old), and the original English questionnaire had also been translated into Cantonese to be used by some of the participants in the Chinese-American group. One of the results was very similar to that of the previous study: For all four of the speech disorders, the responses of the Cantonese-speaking group indicated that the speech-disordered person could improve his/her speech by “trying harder.” While the authors emphasized that this belief may significantly impact the outcome and expectation of any speech therapy offered to Chinese-Americans (e.g., some family members may blame the failure of a speech treatment on the client’s lack of willpower or effort), they also mentioned that this result reflects one of the prominent characteristics common to many Asian cultures: “Effort is viewed as more essential in contributing to success than is innate ability” (Chan, 1992, p. 220). The other finding very similar to that of the earlier study was that, for the cleft
palate and speech of the hearing-impaired sections, the Cantonese-speaking participants were more likely to consider persons with these speech disorders to also be somewhat "emotionally disturbed." However, as the authors argued, since no explanations or examples of an "emotionally disturbed" person were given on either the English or Cantonese questionnaire, different cultures may associate very different connotations with this sensitive term and, therefore, this particular finding needs to be interpreted with caution.

Johnston and Wong (2002) conducted another interesting study examining the cultural differences in beliefs and practices concerning parent-child interactions between 42 Chinese- and 44 Euro-Canadian mothers. Although this is not a study about a disease condition per se, the results still shed light on several important aspects of Chinese culture. The authors indicated that the practice of “conversational apprenticeship” is one of the areas of clear difference between the two cultural groups. Compared to the Western mothers, the Chinese mothers were much less likely to frequently ask their young children for personal narratives or to allow the children to talk with adults who are not family members. Instead, the Chinese mothers were more likely to report using picture books and flash cards to teach their children new words. They disagreed more strongly with the idea that children can learn while playing and believed more strongly that children learn best with adults’ direct instruction. The authors explained that this finding is consonant with the emphasis Chinese culture has on “nurture” rather than “nature,” which also resonates with the statement cited in the previous study about how Asian cultures generally consider “effort” to be more important than “innate ability” in achieving success. Other findings from the study include the notion that Chinese parents
feel responsible not only to teach their children about what is morally and socially right, but also to actively participate in the learning process.

**Dentistry**

Scott, Leung, McMillan, Davis, and Fiske (2001) investigated the emotional effects of complete tooth loss in three populations – English from London, Scottish from Dundee, and Chinese from Hong Kong, with 50 participants in each group. Each participant was asked to complete a questionnaire concerning the effects of tooth loss on self-esteem and daily activities and attitudes toward their dentures. For the Chinese group, the English questionnaire was converted to colloquial Cantonese, and bilingual research assistants conducted the survey in structured interview sessions. To the credit of the authors, the paper warned the reader to consider a type of response bias that may result from these differing data collection methods between the participant groups, as the Chinese respondents might be more tempted to answer the questions in a way that they thought the interviewer would “like it” in a face-to-face interview compared to the other two groups, who both completed a written questionnaire in the privacy of their homes. Nevertheless, the results showed that, while the self-esteem level of people in Dundee and Hong Kong was less affected by their tooth loss than their counterparts in London, for the Hong Kong group the impact on daily activities was reported to be much greater, especially in terms of restrictions on food choices. While this finding can be explained in light of the general Chinese culture placing a great emphasis on food and eating experiences as a major social activity, it is also interesting to note that while close to 100% of the two groups of Western participants wore dentures, only about 78% of Chinese from Hong Kong wore dentures. It is likely that those people who were not
regular denture users would also report difficulties in chewing hard-textured foods. In general, the findings of this study suggested that Chinese in Hong Kong were less inhibited by tooth loss, less concerned about being seen by their family or friends without wearing dentures, and more willing to discuss their tooth loss with family members and other people. Although these findings could be explained in part by the differing levels of stigma each culture associates with tooth loss and/or denture usage, another important environmental factor to consider is that while people in the United Kingdom often enjoy subsidized low-cost dental care, currently the only way to obtain a set of dentures in Hong Kong is through services provided by the expensive private sector.

Optometry

Optometry shares many similarities with audiology in that most of the disorders managed by these two professions are not easily treated by conventional medical methods (such as medication or surgery), but instead, rehabilitation is usually provided by requiring the patient to wear an external prosthetic device (i.e., eyeglasses and hearing aids, respectively). Lau, Lee, Fan, Lau, and Michon (2004) conducted a survey study in order to examine common attitudes towards aspects of vision loss among over 1000 Hong Kong Chinese adults who were stratified into three age groups: 40-49, 50-65, and 66 and above. While the authors claimed that “the perception of health problems by the public has a significant implication for health care planning” (p. 250), they did not include a comparison group of non-Chinese participants, most likely because this was not meant to be a cross-cultural study. Interestingly, when the participants were asked about their most feared disabling condition, 48.1% of participants said it was paralysis after a stroke, 35.7% stated it was blindness, but less than 1% of the participants feared deafness or
dumbness (aphasia) most. It showed that Chinese in Hong Kong place a high degree of importance on having good visual function, and the statistical results also indicated that this pattern of concern is independent of the participants’ demographic and socioeconomic background. The data also suggested the following trends of attitudes toward vision loss in this participant group: 1) Participants tended to believe that vision loss occurs as a result of aging (more common among lower-income participants); 2) while about 50% of participants believed that visiting doctors could guard against age-related vision loss, only 26.4% of those who had an eye problem actually visited a doctor for prevention purposes, suggesting many are waiting and failing to seek vision care in a timely fashion; 3) in total, 17.2% of participants believed that wearing glasses can prevent vision loss; and 4) a smaller group of participants (8%) mentioned that nutrition might have something to do with vision loss, which is in line with the fact that Chinese culture often considers some types of food to be the cause or cure of certain diseases (please refer to the earlier “Chinese Health Beliefs” section, pp. 12 - 14). Like studies in other health areas, the findings from this research provided insights that contributed to the development of the survey items to be used in the current study.

**Cardiology**

Daly, Davidson, Chang, Hancock, Rees, and Thompson (2002) reviewed the literature and discussed the cultural aspects of adjustment to coronary heart disease (CHD) by Chinese-Australians. Cardiovascular disease is perhaps the health problem with the highest mortality rate and economic burden for most of the developed countries around the world. The authors explained that even though traditionally the Asian community has represented a low-risk group when it comes to cardiovascular diseases (CHD in
particular), the increased Westernization of this population (most probably due to a more stressful lifestyle and the intake of more fatty foods) is rapidly reversing this trend. Therefore, this fact "reinforces the importance of identifying Asian migrants' knowledge, beliefs and health seeking behaviours about CHD in order to plan culturally sensitive future services" (p. 395). The Chinese cultural characteristics relevant to heart diseases identified by the authors include the following: 1) For the elderly Chinese population, their priorities, interpretations, and expressions of need towards a certain disease are heavily influenced by their Chinese upbringing and family values (recall the discussions presented in the earlier "Culture as a Context" section, pp. 4 - 8); 2) since Chinese people are usually less inclined to express individual needs unless encouraged by someone else, most Chinese elderly persons exhibit a tendency to take a passive role in terms of expressing their needs and taking control of the treatment regimens; 3) Chinese elderly persons also tend to rely on support from their extended family for their health needs rather than from trained professionals; and 4) studies of traditional Chinese Confucianism, Taoism, and Buddhism give one insight into why Chinese elderly persons behave the way they do – these philosophies state that stresses and sufferings of life are determined by fate and should be valued because they exist to develop one's personal character and serve as means to repay the debts of one's previous lives, as well as that family should be the central priority in the management of all life problems. Moreover, the authors also discussed several ways in which Chinese-Australians utilized health care services: 1) Most Chinese immigrants still preferred to rely on Chinese-speaking family doctors; 2) many Chinese-Australians sought alternative therapeutical methods such as herbal medicine and acupuncture when Western treatments turned out to be unsatisfactory; and
3) there was a prevalent lack of knowledge about the existence of ethnic health care workers available to Chinese-Australians.

**Insights from Reviewing Research Findings From Other Health Areas**

There are at least three major points that can be extrapolated from the preceding review of the attitudinal differences between Chinese and Western cultures regarding several health issues other than hearing impairment. First, the majority of results from these studies pointed to aspects of the Chinese people that are congruent with those reported by observations (both anecdotal and scientific) and empirical research on the Chinese culture itself (please refer to the summary below). Therefore, since the Chinese do hold beliefs about and react to various physical conditions much differently from their Western counterparts, it would be reasonable for one to hypothesize that the Chinese would view and respond to hearing impairment somewhat differently from the general Western population as well.

Second, almost all of the above-mentioned studies came to the same conclusion: If one intends to deliver an effective, culturally sensitive health care service to an ethnic minority group within a mainstream Western context (such as the Chinese immigrants in Canada), one has to first gain in-depth understanding of that group’s cultural characteristics relevant to the disorder in question. This conclusion is not only applicable to the Chinese culture. For example, Sampson (1997) wrote a well thought-out paper regarding culture-related issues that must be considered when applying a family-centred care philosophy to special needs children from Indo-Canadian families. She argued that there are many benefits in store for those clinicians who are willing to take the time to understand and apply the attitudes, values, and habits of the East Indian culture when
working with these children. Some of the benefits include increased family involvement, better rapport with the family, and greater effectiveness of interventions for the child’s disorder. Here it would be reasonable for one to hypothesize that very similar things could be said about Chinese adults with hearing loss. Whether the Chinese consider hearing loss a biomedical disease, a communication disorder (as what most audiologists tend to think), or not a problem at all, and how the Chinese view the conventional Western management of long-term, sensorineural hearing loss (i.e., the prescription of an amplification device) will all affect the structure of an audiological service delivery model that would be “ideal” for this population.

Finally, previous cross-cultural studies of other health issues also provided many general guidelines for the present research on the attitudinal differences between Chinese and Western seniors regarding hearing impairment. Although the topics of investigation are very different, the participant recruitment methods, survey and interview procedures, and statistical analysis strategies presented in those articles still provide excellent models to learn from, especially since there is currently a paucity of past research investigating how traditional health and interpersonal beliefs influence Chinese people when they are confronted with issues that are relevant in the field of audiology.

**SUMMARY: ASPECTS OF CHINESE CULTURE PERTINENT TO HEARING IMPAIRMENT**

Summarizing all of the studies discussed above, the characteristics of the Chinese culture that are the most relevant to the present study include the following: 1) In accordance with ancient philosophical teachings, the family structure remains the most important support system for a Chinese person suffering from any form of ailment; this is especially true for Chinese elderly persons, who tend to spend most of their time at home.
2) Since Chinese elderly persons tend to rely more on family members than professional clinicians for dealing with their health conditions, they usually assume a passive role in terms of seeking help and taking control of any prescribed treatment. 3) As an extension of the previous two cultural aspects, Chinese people tend to wait until symptoms have become quite severe before seeking any medical consultation. 4) Chinese elderly persons tend to view many of their own physical and cognitive declines as part of the natural aging process, and therefore, compared to the Western culture, the Chinese culture is less likely to stigmatize health conditions such as tooth loss, diabetes, and visual impairment. 5) However, Chinese people’s emphasis on face-saving strategies in interpersonal relationships makes it difficult to disclose any physical or mental deficiencies to “outsiders,” which, especially for Chinese elderly persons, generally mean people outside the family. 6) The Chinese traditionally believe that personal effort is more important than natural abilities in achieving success in all forms of life endeavor, which ranges from a student’s grades at school to the outcome of a rehabilitation program. 7) The concept of food consumption resulting in various health conditions is at the heart of traditional Chinese medical beliefs. 8) The phonological and grammatical characteristics of all Chinese languages mean that comprehension of them is less affected than English by a high-frequency sloping hearing loss, because more lexical information is conveyed by phonemes and pitch changes in the lower frequencies. The contrast between these general cultural attitudes and those summarized in the section on Western attitudes to hearing loss provides the parameters for the current cross-cultural investigation of attitudes toward hearing loss and its treatment.
RESEARCH QUESTIONS AND HYPOTHESES

The current study, while exploratory in nature, is aimed at providing both quantitative and qualitative information, through questionnaire and interview methods, concerning the following four research questions (for the interview qualitative data) and related hypotheses (for the questionnaire quantitative data) based on the literature review:

1) What kinds of attitudes and beliefs do elderly Chinese-Canadians have regarding various aspects of hearing impairment (e.g., causes of hearing loss, stigmatization of hearing loss, impact of hearing loss on quality of life, etc.), and how do these attitudes and beliefs compare to those of elderly Euro-Canadians?

   Hypotheses

   Chinese-Canadian elders and Euro-Canadian elders differ in their opinions about:

   1a. The causes of hearing loss and the degree of control they have over its development.

   1b. Whether society stigmatizes hearing loss.

   1c. Whether hearing loss is a health problem.

   1d. Whether hearing loss negatively affects quality of life.

2) What kinds of attitudes and beliefs do elderly Chinese-Canadians have regarding various strategies for coping with hearing impairment (e.g., the price of hearing aids, the best method of using hearing aids, assistance from family members, alternative Chinese therapies, etc.), and how do these attitudes and beliefs compare to those of elderly Euro-Canadians?

   Hypotheses

   Chinese-Canadian elders and Euro-Canadian elders differ in their opinions about:

   2a. Factors that might constitute obstacles to using hearing aids.
2b. The helpfulness of family members and the necessity of seeking professional attention in dealing with hearing loss.

3) What are the proportions of elderly Chinese- and Euro-Canadian participants in the present study who reported having a hearing loss, knew who audiologists are, and/or had previous experience with hearing aids? What do these proportions imply when interpreted in light of each culture's attitudes towards hearing loss?

4) What are the answers to questions #1 and #2 above if one only compares the responses given by those elderly participants across the two cultural groups who reported a hearing loss? (See hypotheses 1a through 2b above.)

It is important to note that the two collective terms "Chinese-Canadian" and "Chinese" are used synonymously and interchangeably throughout this thesis. Chinese people from different parts of the world, which could be geographically proximal locations such as Mainland China, Hong Kong, and Taiwan, could exhibit regional minor cultural variations (Johnston & Wong, 2002) or even speak different Chinese languages, such as Mandarin, Southern Min, or Hakka. While not ignoring the important micro-cultural and linguistic differences within the ethnic Chinese community, the current research is aimed at investigating at the "macro-cultural" level to see how Chinese people as a whole differ from the conventional Western common sense regarding several selected topics in audiology. Many previous studies agree that this Chinese macro-culture is considerably homogeneous across Chinese populations from different geographical and political regions (see, e.g., Lai & Yue, 1990). For example, while local residents from Taiwan and Hong Kong may speak different languages and subscribe to different dietary habits, both groups of Chinese people share a very similar conceptual framework when it comes to categorizing different types of food as "hot," "cold," or
“poisonous.” This principle above also applies to the terms used to designate the control group of the present study, namely, “Western,” “Euro-Canadian,” and “North American,” all of which essentially refer to people who only speak English at home and who can trace their ancestral roots from both sides of the family back to Europe.

The current study attempts to find out, based on the literature reviewed here, whether the elderly participants will indeed express dissimilar patterns of attitudes and beliefs to survey items concerning aspects of hearing loss and various treatments for hearing loss in accordance with their membership in one of the two cultural groups under investigation. Given the exploratory nature of the current study, it is my hope that the findings will inspire audiologists and other hearing care specialists to deliver more effective treatment regimes and culturally sensitive services for their Chinese clients as well as inform researchers to generate better-defined hypotheses for this topic and follow them through with larger-scale studies in the near future.

The remainder of this thesis is organized in the following way: Chapter Two presents the methods used in this investigation. Chapter Three presents the results of the quantitative tests performed on the questionnaire data. Chapter Four summarizes the verbal responses recorded during the interview sessions. Chapter Five combines and interprets the results found in both Chapters Three and Four in light of the literature presented in the current chapter.
Chapter Two
Methods

A questionnaire and an interview script were constructed, based on study results and cultural theories discussed in Chapter One, to serve as the research materials for the present study. A Chinese version of the questionnaire was produced to be used by the Chinese participants. Elderly participants from the two cultural groups were recruited by contacting community-based organizations throughout the Greater Vancouver Area and by third-party referrals. Questionnaire responses from 30 Chinese-Canadian elderly participants and 30 Euro-Canadian elderly participants were included in the subsequent analyses. Eight of the Chinese participants and seven of the Western participants also agreed to participate in a follow-up, one-to-one interview session, which was an opportunity for each participant to elaborate on the responses he/she had given on the questionnaire. The survey data from the questionnaire were analyzed using statistical computer software to investigate differences in attitudes and beliefs between the two cultural groups. The recorded interview data were transcribed word-by-word, and similar answers from different participants in each culture were grouped together according to the corresponding research topics. This chapter provides details of these methods.

RESEARCH INSTRUMENTS

The Questionnaire

A written self-administrable survey questionnaire was constructed to document the cultural differences between Chinese- and Euro-Canadian elderly persons in their
attitudes towards hearing impairment and its related treatment options. Most of the items in the survey were straightforward statements such as “People react negatively to those who have a hearing loss” and “The smaller the hearing aids are, the more likely I am going to wear them.” For each item, participants were asked to rate their agreement with the statement by choosing a number on a Likert scale\(^1\) of “1” to “5,” with “1” indicating “Strongly Disagree,” “3” indicating “Neutral/Not Sure,” and “5” indicating “Strongly Agree.” In addition, there were three survey items that utilized a yes-no question format, for example, “Do you have a hearing loss?” with a neutral category of “Not Sure” being the third answer choice. The questionnaire was presented in a large font to minimize reading difficulty in case any of the participants had visual impairment. The complete English and Chinese versions of the questionnaire in their original format are included in Appendices A and B.

To ensure that only data from participants who met the criteria for membership in one of the two cultural groups under investigation was included in the analysis process, at the beginning of the questionnaire there were also seven questions asking each participant to provide some demographic information. These questions requested the participant’s full name, gender, place of birth, length of residence in Canada, main language used at home, other language(s) used at home; and the age group in which he/she belonged (four age groups in total: 65-69, 70-79, 80-89, and 90 or above). The questions about length of residence in Canada and languages used at home were added, due to the fact that the majority of Vancouver residents have recent ancestors who were immigrants or are

\(^1\) A Likert scale is one of the most common psychometric scales used in survey studies. The respondents indicate on the Likert scale their level of agreement to each of the statements appearing on a questionnaire. The Likert scale measures either positive or negative response to a statement, and the data collected is ordinal in nature (Wikipedia, 2006).
immigrants themselves, and therefore place of birth alone may not always accurately represent the cultural membership of an individual living in this ethnically diverse city. Since individuals had to be at or above the age of 65 to be eligible to participate in the current study, getting the exact age from each participant was judged not to be required; however, a question about the age group was included to make sure that a dramatically differential age distribution between the two cultural groups would not be a factor confounding the results, and yet it would allow for possible differences among younger and older elders.

Survey items were primarily based on a review of relevant studies (see Chapter One), as well as in consultation with published research and clinical questionnaires available in some of those studies (e.g., see Huch & Hosford-Dunn, 2000; Jerram & Purdy, 2001). Each statement in the questionnaire was designed, based on the literature review, to elicit the greatest difference in the responses of the two cultural groups by tapping into one specific characteristic of the Chinese culture that could have an impact on attitudes towards hearing loss. For example, from some of those studies discussed in Chapter One, we know the Chinese believe that an unbalanced food intake can be the cause of many diseases and disorders. From this one could infer that perhaps it is likely for a Chinese elder to link long-term dietary practices with old-age hearing impairment, and hence the survey item “The kinds of food people eat throughout their lifetime influence the development of hearing loss in old age.”

While the questionnaire itself was broken down into several general sections, such as “Attitudes towards Hearing Loss” and “Attitudes concerning Coping Strategies,” this partition scheme was more to increase the ease of understanding for the participants than to provide a grouping basis for the subsequent statistical analysis of data. Each
non-demographic item in the questionnaire represented a unique cultural concept as it was applied in an audiological context, with mean ratings leaning towards either end of the Likert scale (i.e., “strongly disagree” and “strongly agree”) meaningful for the purposes of the current research.

Besides the Likert scale items, there were also three yes-no questions (with “Not Sure” also included as a neutral answer), namely “Do you have a hearing loss?,” “Do you know what audiologists do?,” and “Have you ever worn a hearing aid?.” Among these three items, the first question, which asked respondents to report whether they think they have a hearing impairment or not, played an important role in the construction of the survey study. The first function it served is to divide participants in one cultural group into two subgroups, i.e., those who perceive themselves to have a hearing loss versus those who do not, to allow analysis to be performed in accordance with the research questions listed in Chapter One (see the section on data analysis procedures towards the end of this chapter). Second, the last section of the questionnaire dealt with prior experiences with hearing impairment and its associated coping strategies and was therefore only intended for those participants who believe they actually have a hearing loss. A skip-pattern questionnaire format (Bourque & Fielder, 2003) was utilized to achieve this desired response pattern. The instruction printed on the questionnaire made it clear that only those individuals who select “Yes” as an answer to the question “Do you have a hearing loss?” should complete the items included in the last section.

After the English version of the questionnaire was finalized, the investigator (myself), who is fluent in both English and Mandarin, translated the questionnaire into Chinese. The Chinese version was then reviewed and back-translated by two other Mandarin speakers (both of whom are bilingually fluent and completed their Master’s
degrees in Canadian universities) to ensure that the translation was free of Chinese grammatical errors and accurately conveyed a meaning equivalent, both semantically and pragmatically, to each English survey item.

To recruit participants for the second stage of the current study, the last section of the questionnaire contained a brief introduction to a follow-up one-on-one interview session that only participants who completed the questionnaire were eligible to attend. While the short introduction made it clear that not everyone who completed the questionnaire needed to participate in this follow-up portion of the study, it asked those participants who were interested in an interview to provide their phone numbers, addresses (optional), and preferred locations of the interview (also optional) so that the investigator could contact them directly. The following section is on the development of the interview script itself.

The Interview Script

The follow-up interview was designed to be an opportunity for the participants to clarify and elaborate on some of the responses they gave on the questionnaire, and therefore, its purpose was not to obtain any “new” information from the participants in comparison with the survey. The results from the interview procedure not only produced qualitative data for the current study, but they also helped interpret the results of the quantitative questionnaire data.

The script itself was designed to be a structured interview, with the interviewer asking the questions in the exact order as they appeared on the script, but all of the items were open-ended questions to allow the maximum degree of freedom and self-reflection in the participant’s response. Each question was closely linked to one of the survey items
on the questionnaire, and the actual wording of each question was dependent on the response the participant provided for that particular question when he/she completed the questionnaire. For example, if a participant indicated agreement with the statement “The ultimate goal of wearing hearing aids is to restore one’s hearing to normal,” then the interview question for her regarding this item was “Why do you think the ultimate goal of wearing hearing aids is to restore one’s hearing to normal?” On the other hand, if the same participant indicated disagreement with the statement “The best person to consult first about a hearing loss is a medical doctor,” then the interview question for her would be “Why don’t you think a hearing-impaired person should consult a medical doctor first?” The complete interview script in its original format is included in Appendix C.

As a rule of thumb, only those items on the questionnaire that could potentially generate verbal elaboration of responses from most participants were included in the follow-up session. A few survey items, such as the one that dealt with the participants’ perceptions of hearing loss and some common alternative therapies (e.g., acupuncture, massage therapy, herbal medicine, etc.), might warrant further elaborations from the participants and were selectively broken down into two or three smaller questions to help guide the direction of discussion. The entire interview script was divided up into four major sections, primarily for the ease of recording answers.

A formal translation of the interview script was not judged to be necessary, for the following reasons: 1) The investigator who designed the questionnaire and the script was going to administer all of the interview sessions directly; 2) none of the participants would need to read the actual script, since the interview is strictly a verbal conversation; and 3) most of the interview questions were constructed simply by adding the phrase “Why do/don’t you think that...” before the original questionnaire items, in which case
any translation errors are not likely to take place. However, a rough Chinese translation of the interview material was included to serve as reminders for the investigator when administering the interview.

RESEARCH PARTICIPANTS

Inclusion Criteria

To select participants representative of their respective cultural groups and to minimize any noncultural factors that could confound the experimental results, a set of inclusion criteria was defined for participants. To qualify to be a participant for the Chinese-Canadian cultural group, a person had to self-identify as a Chinese, be at least 65 years of age and overall physically and mentally capable of completing the written questionnaire form by him/herself, and demonstrate an ability to read and understand middle-school level Chinese effortlessly. In addition, the Chinese participant must have lived in Canada, the United States, and/or other Western countries (e.g., Europe and Australia) for no more than 20 years cumulatively. On the other hand, to be eligible to participate as an Euro-Canadian participant, a person had to be at least 65 years of age and overall physically and mentally capable of completing the written questionnaire form by him/herself, and demonstrate an ability to read and understand middle-school level English effortlessly. In addition, Euro-Canadian participants must have spent at least half of their lifetime in Canada or the United States. However, since the main purpose of the present study was to find out how Chinese- and Euro-Canadian older adults in general react to topics concerning hearing impairment, it was also made clear to any potential participant that having a hearing loss or not was not a requirement to participate in the survey.
Recruitment Processes

To recruit potential participants for the current study, the first step was to contact a number of churches, seniors' residences, and local community centres throughout the Greater Vancouver Area to inquire about the demographics of any elderly members at those places and the possibility of conducting a survey study with them. This task was carried out by the investigator, who also explained the purpose and procedures of the study in detail to the representative of each institution. The original consent forms and the questionnaire in both languages were made available to be examined by the representatives as well. In one instance, an outreach centre invited the investigator to join attendees for a special talk on audiology and hearing aids designed for Cantonese-speaking seniors and featured an audiologist guest speaker from the Western Institute for the Deaf and Hard-of-Hearing (WIDHH). The investigator was permitted to announce the survey study to the entire audience at the end of the talk. In another instance, a friend of the investigator had volunteered to distribute a stack of pre-sorted survey packages with pre-stamped envelopes to a number of elderly members in her English-speaking church and asked those individuals who chose to participate to mail the questionnaire back directly once they were done. Overall, approximately half of the total participants were recruited through this method.

The other half of the participants were recruited through the assistance lent by a network of people, which is also called the third-party referral method. Many friends of the investigator volunteered and asked their family members, distant relatives, friends, acquaintances, and neighbours who met the inclusion criteria whether they would be interested in participating in the study. Those who expressed interest in the study were
referred to the investigator, who then contacted the potential participants directly to explain the procedures in greater details and make sure that they understood what tasks would be involved. As it turned out, some of the volunteers were also involved in the delivery and retrieval of the survey materials, if having an intermediary was deemed to be the best way to reach the potential participants.

Recruitment posters for the current study were put up at the School of Audiology and Speech Sciences at UBC and in several community centres, but they were not helpful in recruiting participants.

Participant Characteristics

Thirty-three Chinese participants in total filled out the questionnaire. However, three of the questionnaires were later excluded from analysis because these participants indicated in the demographics section that they had lived in Canada for more than 20 years, reducing the total number of Chinese participants to 30. Of those 30 participants, 15 were men, and 15 were women. Twenty-one of them indicated that they were born in Mainland China, six in Taiwan, and the remaining three in Hong Kong, Indonesia, and Macau, respectively. The length of residence in Canada for this group of Chinese participants ranged from less than six months to about 19 years, with a Mean of 6.8 years, a Median of 5.0 years, and a Standard Deviation (SD) of 5.4 years. Concerning the question of main language used at home, 16 indicated Mandarin, seven indicated Cantonese, four indicated Shanghainese (one of the Chinese languages commonly spoken in and around the City of Shanghai), two indicated Taiwanese, and only one indicated Hakka (another Chinese language with its major clusters of speakers in Southern China
**TABLE 2.1**
Description of Chinese-Canadian Participants

<table>
<thead>
<tr>
<th>Participant</th>
<th>Gender</th>
<th>Place of Birth</th>
<th>Years of Residence in Canada</th>
<th>Primary Language</th>
<th>Age Group</th>
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<td>M</td>
<td>China</td>
<td>5</td>
<td>Mandarin</td>
<td>70-79</td>
</tr>
<tr>
<td>C21</td>
<td>F</td>
<td>China</td>
<td>5</td>
<td>Mandarin</td>
<td>70-79</td>
</tr>
<tr>
<td>C22</td>
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<td>China</td>
<td>9</td>
<td>Mandarin</td>
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</tr>
<tr>
<td>C23</td>
<td>F</td>
<td>China</td>
<td>10</td>
<td>Shanghainese</td>
<td>70-79</td>
</tr>
<tr>
<td>C24</td>
<td>M</td>
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<td>70-79</td>
</tr>
<tr>
<td>C25</td>
<td>F</td>
<td>Taiwan</td>
<td>0.5</td>
<td>Mandarin</td>
<td>70-79</td>
</tr>
<tr>
<td>C26</td>
<td>M</td>
<td>China</td>
<td>0</td>
<td>Cantonese</td>
<td>70-79</td>
</tr>
<tr>
<td>C27</td>
<td>M</td>
<td>China</td>
<td>4</td>
<td>Cantonese</td>
<td>70-79</td>
</tr>
<tr>
<td>C28</td>
<td>M</td>
<td>Taiwan</td>
<td>0.5</td>
<td>Mandarin</td>
<td>70-79</td>
</tr>
</tbody>
</table>
and Taiwan). In terms of age groups, seven of the 30 Chinese participants indicated that they belonged to the 65-69 age group, and the other 23 belonged to the 70-79 age group. No Chinese participants were 80 years old or older. For a description of the 30 Chinese participants, please refer to Table 2.1.

A total of 34 Euro-Canadian (i.e., Western) participants completed and returned the questionnaire. However, upon further inspection, four of the questionnaires had to be excluded from analysis because these participants did not answer the question “Do you have a hearing loss?” (even though they still filled out the last section of the questionnaire labeled clearly for “individuals with hearing loss only”), making it impossible to classify these participants into either the normal-hearing or the hearing-loss group, which is crucial for some analyses. This reduced the total number of valid Euro-Canadian questionnaires to 30. Of those 30 Western participants, 13 were men, and 17 were women. Twenty-five of them indicated that they were born in Canada, two in the United States, and the remaining three in Germany, India, and Spain, respectively. The length of residence in Canada for the five Western participants who were not born in Canada ranged from 35 to 54 years, with a Mean of 44 years. Concerning the question of main language used at home, 28 of the 30 Western participants indicated English, one person indicated German, and the last person indicated Spanish. In terms of age groups, 10 indicated that they belonged to the 65-69 age group, 14 to the 70-79 age group, and six to the 80-89 age group. For a description of the 30 Euro-Canadian participants, please refer to Table 2.2.
TABLE 2.2
Description of Euro-Canadian Participants

<table>
<thead>
<tr>
<th>Participant</th>
<th>Gender</th>
<th>Place of Birth</th>
<th>Years of Residence in Canada</th>
<th>Primary Language</th>
<th>Age Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>W1</td>
<td>M</td>
<td>Canada</td>
<td>from birth</td>
<td>English</td>
<td>65-69</td>
</tr>
<tr>
<td>W2</td>
<td>F</td>
<td>Canada</td>
<td>from birth</td>
<td>English</td>
<td>65-69</td>
</tr>
<tr>
<td>W3</td>
<td>M</td>
<td>USA</td>
<td>35</td>
<td>English</td>
<td>65-69</td>
</tr>
<tr>
<td>W4</td>
<td>F</td>
<td>Canada</td>
<td>from birth</td>
<td>English</td>
<td>80-89</td>
</tr>
<tr>
<td>W5</td>
<td>M</td>
<td>Canada</td>
<td>from birth</td>
<td>English</td>
<td>70-79</td>
</tr>
<tr>
<td>W6</td>
<td>M</td>
<td>Spain</td>
<td>49</td>
<td>Spanish</td>
<td>70-79</td>
</tr>
<tr>
<td>W7</td>
<td>F</td>
<td>Canada</td>
<td>from birth</td>
<td>English</td>
<td>70-79</td>
</tr>
<tr>
<td>W8</td>
<td>F</td>
<td>USA</td>
<td>35</td>
<td>English</td>
<td>65-69</td>
</tr>
<tr>
<td>W9</td>
<td>F</td>
<td>Canada</td>
<td>from birth</td>
<td>English</td>
<td>65-69</td>
</tr>
<tr>
<td>W10</td>
<td>F</td>
<td>Canada</td>
<td>from birth</td>
<td>English</td>
<td>80-89</td>
</tr>
<tr>
<td>W11</td>
<td>F</td>
<td>Canada</td>
<td>from birth</td>
<td>English</td>
<td>70-79</td>
</tr>
<tr>
<td>W12</td>
<td>F</td>
<td>Canada</td>
<td>from birth</td>
<td>English</td>
<td>70-79</td>
</tr>
<tr>
<td>W13</td>
<td>F</td>
<td>Canada</td>
<td>from birth</td>
<td>English</td>
<td>65-69</td>
</tr>
<tr>
<td>W14</td>
<td>F</td>
<td>Germany</td>
<td>54</td>
<td>German</td>
<td>80-89</td>
</tr>
<tr>
<td>W15</td>
<td>M</td>
<td>Canada</td>
<td>from birth</td>
<td>English</td>
<td>65-69</td>
</tr>
<tr>
<td>W16</td>
<td>M</td>
<td>Canada</td>
<td>from birth</td>
<td>English</td>
<td>80-89</td>
</tr>
<tr>
<td>W17</td>
<td>M</td>
<td>Canada</td>
<td>from birth</td>
<td>English</td>
<td>70-79</td>
</tr>
<tr>
<td>W18</td>
<td>F</td>
<td>Canada</td>
<td>from birth</td>
<td>English</td>
<td>70-79</td>
</tr>
<tr>
<td>W19</td>
<td>M</td>
<td>Canada</td>
<td>from birth</td>
<td>English</td>
<td>70-79</td>
</tr>
<tr>
<td>W20</td>
<td>F</td>
<td>Canada</td>
<td>from birth</td>
<td>English</td>
<td>70-79</td>
</tr>
<tr>
<td>W21</td>
<td>F</td>
<td>Canada</td>
<td>from birth</td>
<td>English</td>
<td>70-79</td>
</tr>
<tr>
<td>W22</td>
<td>M</td>
<td>Canada</td>
<td>from birth</td>
<td>English</td>
<td>80-89</td>
</tr>
<tr>
<td>W23</td>
<td>F</td>
<td>Canada</td>
<td>from birth</td>
<td>English</td>
<td>80-89</td>
</tr>
<tr>
<td>W24</td>
<td>M</td>
<td>Canada</td>
<td>from birth</td>
<td>English</td>
<td>65-69</td>
</tr>
<tr>
<td>W25</td>
<td>M</td>
<td>Canada</td>
<td>from birth</td>
<td>English</td>
<td>70-79</td>
</tr>
<tr>
<td>W26</td>
<td>M</td>
<td>Canada</td>
<td>from birth</td>
<td>English</td>
<td>65-69</td>
</tr>
<tr>
<td>W27</td>
<td>F</td>
<td>India</td>
<td>47</td>
<td>English</td>
<td>70-79</td>
</tr>
<tr>
<td>W28</td>
<td>F</td>
<td>Canada</td>
<td>from birth</td>
<td>English</td>
<td>70-79</td>
</tr>
<tr>
<td>W29</td>
<td>M</td>
<td>Canada</td>
<td>from birth</td>
<td>English</td>
<td>70-79</td>
</tr>
<tr>
<td>W30</td>
<td>F</td>
<td>Canada</td>
<td>from birth</td>
<td>English</td>
<td>65-69</td>
</tr>
</tbody>
</table>
SURVEY PROCEDURES

Each participant was asked to thoroughly read and sign the consent form for the present study before he/she start filling out the questionnaire. The investigator was available, either in person or by phone, to answer whatever questions the participant might have during the consent process. After the consent form was signed and collected, each participant spent about 15 to 25 minutes completing a copy of the questionnaire individually and asked the investigator questions regarding the format and content of the questionnaire as needed. After the participants finished filling out the questionnaire, they gave the forms either to the investigator, to the intermediary volunteer who referred them, or simply mailed the forms back directly in pre-stamped envelopes.

For the second stage of the investigation, the investigator contacted those persons who indicated on the last page of the questionnaire that they would be interested in a follow-up interview to inquire about their preferences in conducting the interview. Eight individuals from the group of 30 Chinese seniors participated in the follow-up interview session. Out of those eight interviewees, two were men (C4 and C20), and six were women (C1, C2, C3, C5, C6, and C21). Three of the interviewees indicated that they had a hearing loss, while the other five did not. Seven individuals from the group of 30 Euro-Canadian seniors participated in the subsequent interview session. Of those seven, three were men (W1, W19, and W22), and four were women (W2, W10, W14, and W18). Five of the Western interviewees indicated that they had a hearing loss, while the other two did not.

The interview session itself was designed to take about 20 to 30 minutes, and every interviewee was encouraged to elaborate on his/her verbal responses as much as possible. The investigator served as the interviewer for all of the interview sessions. Due to
personal reasons, two of the Chinese and two of the Western interviewees preferred to be interviewed over the phone. For these four participants, the investigator asked the questions and promptly wrote down everything they said in response to the questions on the other end of the receiver. For all of the other interviewees, the investigator was able to conduct a face-to-face interview with them at locations according to their preferences and utilized a portable digital voice recorder to capture the entire conversations. Two volunteer interpreters (one for each occasion) participated in the interviews of two of the eight Chinese participants – one of them speaks Taiwanese only, and the other speaks Cantonese only. (Even though the investigator grew up in an all-Taiwanese environment, his mother tongue is still Mandarin Chinese. Therefore, while the investigator can carry out a simple conversation in Taiwanese, his knowledge of Taiwanese is still insufficient when it comes to occasions such as a formal interview.) For a detailed description of further characteristics of interview participants from both the Chinese and Western cultural groups, please see Chapter Four.

DATA ANALYSIS PROCEDURES

The Quantitative Data

All of the data from the questionnaire were entered into, stored, coded, and analyzed using the computer software SPSS 10.0 (Statistical Package for the Social Sciences; 1999-2000). After the initial data entry and coding, the numbers were double-checked against the original questionnaire forms to ensure the accuracy and reliability of the final output. To answer the research questions as outlined in Chapter One, some of the original responses obtained from the questionnaire had to be recoded so that appropriate statistical tests could be performed on them. Specifically, each participant's cultural membership
was the most important independent variable required to answer every research question and the main distinction that the current study set out to investigate. To ensure that the coding scheme of cultural grouping stayed consistent throughout, all Chinese participants were assigned a cultural value of “1” and all Western participants a cultural value of “2” at the beginning of the analysis process. In fact, this was all the recoding needed to answer research questions #2 and #3. Moreover, the responses to the three yes-no questions were recoded into numerical data, which were then calculated by descriptive statistical methods in order to answer research question #1. The original data obtained by the first of the yes-no questions “Do you have a hearing loss?” were further recoded to reflect the differences in both cultural membership and response category in preparation for statistical manipulations that provided answers for research questions #4 and #5. None of the original numerical data obtained from the Likert-scale items required recoding. All of the descriptive and inferential statistical results obtained via SPSS are discussed in detail in the following Chapter Three.

Each item on the questionnaire represents an individual hypothesis. Thus, the responses to each item were analyzed separately. In addition, some items are grouped (but not statistically) to address the more general hypotheses and questions in Chapter One, as follows:

1a: Items #9, #13, #15, #17, #21, #22
1b: Items #10, #11, #14, #18
1c: Items #12, #23
1d: Items #8, #11, #16, #18
2a: Items #19, #20, #24, #26, #27
2b: Items #19, #23, #25, #28
Note that in some cases a single item is relevant to more than one hypothesis. For participants who reported a hearing loss, the following items were added in evaluating each hypothesis:

1b: Items #34, #36
1c: Item #35
1d: Item #38
2a: Items #33, #37
2b: Item #32

The Qualitative Data

All of the recorded interview data were downloaded from the digital recorder onto a personal computer. A word-by-word orthographic transcription was then performed to transform all of the audio files into text documents. A volunteer transcribed a portion of the English-language digital recordings, and all of her transcriptions were later checked against the original audio files to ensure accuracy and consistency. The investigator transcribed all of the other audio files himself. As a courtesy to the participants, sometimes the investigator explained at length some points of personal interest requested by the interviewee that had little to do with the interview script itself. Therefore, a full transcription was performed on everything the participants themselves had said, but only a summary transcription was done for what the investigator had said to indicate the corresponding topic being discussed at each moment and the wording of the interview questions. For the Chinese-language audio files, the investigator listened carefully to each segment of the recordings and then translated the sentences into their English equivalents with an attempt to match their original meanings as closely as possible. All of the
hand-written minutes of the telephone interview sessions were carefully organized and typed out into the computer as well.

After this, the responses from all of the interviewees were summarized and compiled according to the order of topics and questions listed in the interview script, keeping in mind specific questionnaire items that each interview question corresponds to. The answers from the two cultural groups were separated from each other (unless the answers were nearly identical across cultures) and similar responses were grouped together to make them easier to read and analyze. Interview data are summarized in Chapter Four.
Chapter Three
Questionnaire Results

This chapter presents several analyses of the questionnaire data in order to provide quantitative answers to the research questions posed in Chapter One. First, questionnaire responses from all Chinese-Canadian participants were compared with those from all Euro-Canadian participants to find out what aspects of hearing impairment and its related treatments elicited an attitudinal difference between the two cultures. Then, the same statistical procedure was carried out to answer essentially the same question, except this time with questionnaire data only from those who reported a hearing loss in each of the cultural groups. Analyses were also performed to rule out some of the demographic factors as potential mediating variables, thus ensuring the homogeneity of response patterns within each cultural group. Finally, summary statistics were provided for all Chinese and Western participants’ responses to the three yes-no questions in the questionnaire.

The questionnaire had eleven items in the section titled “General Attitudes towards Hearing Loss” and ten items in the section titled “Attitudes concerning Coping Strategies.” Each item utilized the Likert scale to measure each participant’s level of agreement with a particular statement, and all of these 21 items were intended for all participants from both the Chinese- and Euro-Canadian cultural groups. As mentioned in Chapter Two, the questionnaire also contained three yes-no questions intended for all of the participants. The last section of the questionnaire, titled “Attitudes and Experiences,”
had seven Likert-scale items intended only for those participants who chose “Yes” as their response to one of the yes-no questions: “Do you have a hearing loss?”

CHINESE VS. WESTERN I: ALL PARTICIPANTS

To investigate whether participants in the Chinese and Western groups expressed different levels of agreement with the 21 statements about attitudes towards hearing impairment in general and related coping methods, independent samples t-tests were employed to compare the mean agreement ratings for each individual item between the two cultural groups. Table 3.1 details the mean ratings and standard deviations of Chinese and Western participants’ responses to each of these 21 items, and Table 3.2 presents the associated t-test results along with their corresponding questionnaire statements (only the significant results are shown in this chapter; complete t-test results for all items can be found in Appendix D).

Levene’s Test for Equality of Variances was included as part of the t-test procedure. This was to control for any unequal variances found between the two groups, which would violate the Second Assumption of equal variances of the independent samples t-test method. If a significance level from Levene’s Test associated with a particular item was smaller than an α level of 0.05, then the variances between the two group means were significantly different, in which case the t-test p-value calculated under the condition “equal variances not assumed” was reported as the basis of determining whether the means themselves were significantly different or not. Conversely, if a significance level from Levene’s Test was greater than or equal to an α level of 0.05, then the variances were not significantly different, in which case the t-test p-value computed under the condition “equal variances assumed” was reported.
<table>
<thead>
<tr>
<th>Survey Item Number</th>
<th>Chinese-Canadian M (SD)</th>
<th>Euro-Canadian M (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>4.30 (1.15)</td>
<td>4.33 (1.03)</td>
</tr>
<tr>
<td>9</td>
<td>3.80 (1.24)</td>
<td>4.40 (.56)</td>
</tr>
<tr>
<td>10</td>
<td>3.40 (1.30)</td>
<td>3.60 (1.22)</td>
</tr>
<tr>
<td>11</td>
<td>3.30 (1.26)</td>
<td>3.17 (1.14)</td>
</tr>
<tr>
<td>12</td>
<td>3.77 (1.33)</td>
<td>3.31 (1.39)</td>
</tr>
<tr>
<td>13</td>
<td>2.17 (.87)</td>
<td>2.03 (.89)</td>
</tr>
<tr>
<td>14</td>
<td>2.63 (1.27)</td>
<td>3.10 (1.09)</td>
</tr>
<tr>
<td>15</td>
<td>4.07 (1.20)</td>
<td>3.21 (1.21)</td>
</tr>
<tr>
<td>16</td>
<td>4.27 (1.08)</td>
<td>4.07 (.92)</td>
</tr>
<tr>
<td>17</td>
<td>2.47 (1.04)</td>
<td>2.70 (1.06)</td>
</tr>
<tr>
<td>18</td>
<td>1.93 (1.17)</td>
<td>1.69 (1.04)</td>
</tr>
<tr>
<td>19</td>
<td>3.33 (1.27)</td>
<td>3.48 (1.02)</td>
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<tr>
<td>20</td>
<td>3.97 (1.00)</td>
<td>4.04 (.96)</td>
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<td>21</td>
<td>3.33 (1.09)</td>
<td>2.23 (.94)</td>
</tr>
<tr>
<td>22</td>
<td>3.13 (1.17)</td>
<td>2.67 (1.06)</td>
</tr>
<tr>
<td>23</td>
<td>4.50 (.68)</td>
<td>4.23 (.86)</td>
</tr>
<tr>
<td>24</td>
<td>4.55 (.74)</td>
<td>3.37 (1.16)</td>
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<td>25</td>
<td>1.67 (1.12)</td>
<td>1.73 (1.14)</td>
</tr>
<tr>
<td>26</td>
<td>3.40 (1.28)</td>
<td>2.77 (1.28)</td>
</tr>
<tr>
<td>27</td>
<td>3.87 (1.17)</td>
<td>2.63 (1.00)</td>
</tr>
<tr>
<td>28</td>
<td>3.20 (1.42)</td>
<td>2.03 (1.13)</td>
</tr>
</tbody>
</table>

1 On a Likert scale of 1 to 5, where 1 means "strongly disagree," 3 means "neutral/not sure," and 5 means "strongly agree."

2 Chinese-Canadian N = 30; Euro-Canadian N = 30.

Since the results of quantitative analyses above involved a total of 21 sets of t-test comparisons, it is highly probable that an α level of 0.05 (i.e., 5%) could translate into the fact that for every 20 comparisons that are shown to be significant, one of them could be due to chance. On the other hand, if one opted for a much smaller α level (such as 0.001),
the likelihood of committing a Type II Error would increase dramatically. To counter these potential statistical problems, the decision was made to use Holm’s Method for Control of Type I Error (Shaffer, 1995). Assuming an $\alpha_{\text{family}}$ of 0.05, Holm’s Method ranks all of the $p$-values from the smallest to the greatest and calculates the $\alpha$ level appropriate for each individual comparison to determine the significance of its $p$-value. Each appropriate level of $\alpha$ is obtained by dividing 0.05 by the total number of comparisons minus the number of $p$-values already compared, if any. For example, if there were a total of 30 comparisons, then the calculated $\alpha$ level for the smallest $p$-value would be $0.05/30 = 0.00167$, the calculated $\alpha$ level for the next smallest $p$-value would be $0.05/(30-1) = 0.00172$, the calculated $\alpha$ level for the third smallest $p$-value would be $0.05/(30-2) = 0.00179$, etc. Because the current study is exploratory in nature and the number of participants is relatively small, results that did not meet these strict criteria for significance will still be mentioned in some cases in order not to prematurely eliminate potentially interesting parameters for future investigation.

The results of the statistical tests indicated that four out of the 21 items (#21, #24, #27, #28) exhibited significantly different mean ratings by the two cultural groups. When combined with the mean rating data shown in Table 3.1, the results suggest that 1) the Chinese elderly participants were more likely than the Western elderly participants to agree that wearing hearing aids prevents further deterioration in hearing (item #21); 2) the Chinese elderly participants agreed more strongly than the Western elderly participants that the ultimate goal of wearing hearing aids is to restore one’s hearing to normal (item #24); 3) the Chinese elderly participants were more likely than the Western elderly participants to agree that it is best not to wear hearing aids all day long (item #27); and 4) the Chinese elderly participants were more likely to think that family members are better...
TABLE 3.2
Independent Samples t-Test Results Comparing Chinese-Canadian and Euro-Canadian\textsuperscript{1} Participants' Responses to Items #8 - #28 for Which There Was a Significant Difference\textsuperscript{2}

<table>
<thead>
<tr>
<th>Survey Statements</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>#9 &quot;The kinds of jobs people have throughout their lifetime influence the development of hearing loss in old age.&quot;</td>
<td>-2.408</td>
<td>40.429</td>
<td>.021</td>
</tr>
<tr>
<td>#15 &quot;Hearing loss is a natural part of getting old.&quot;</td>
<td>2.742</td>
<td>57</td>
<td>.008</td>
</tr>
<tr>
<td>#21 &quot;Wearing hearing aids prevents further deterioration in hearing.&quot;</td>
<td>4.188</td>
<td>58</td>
<td>.000</td>
</tr>
<tr>
<td>#24 &quot;The ultimate goal of wearing hearing aids is to restore one's hearing to normal.&quot;</td>
<td>4.704</td>
<td>49.348</td>
<td>.000</td>
</tr>
<tr>
<td>#27 &quot;It is best not to wear hearing aids all day long; allowing the ears to rest throughout the day is a good way to preserve one's remaining hearing.&quot;</td>
<td>4.398</td>
<td>58</td>
<td>.000</td>
</tr>
<tr>
<td>#28 &quot;In most cases, family members are better able than rehabilitation clinicians (e.g., audiologists) to help a person with hearing loss.&quot;</td>
<td>3.516</td>
<td>55.134</td>
<td>.001</td>
</tr>
</tbody>
</table>

\textsuperscript{1} Chinese-Canadian \( N = 30 \); Euro-Canadian \( N = 30 \).

\textsuperscript{2} Results for all items can be found in Appendix D.

able than rehabilitation clinicians to help a person with hearing loss, and vice versa for the Western elderly participants (item #28).

Moreover, the responses to two other items, #9 \( (p = 0.021) \) and #15 \( (p = 0.008) \), were also deemed to be "marginally" significantly different, because response differences for these items would have been significant had one chosen the more liberal \( \alpha = 0.05 \). Again, with the mean ratings in mind, these marginally significant results could potentially suggest that 1) the Chinese elderly participants agreed less strongly than the Western elderly participants that the kinds of jobs people have throughout their lifetime influence the development of hearing loss in old age (item #9); and 2) the Chinese elderly
TABLE 3.3
Ranking and Significance of t-Test p-Values According to Holm's Method for Comparisons Between the Chinese and Western Cultural Groups

<table>
<thead>
<tr>
<th>Survey Item Number</th>
<th>Ranking &amp; p-Values</th>
<th>Adjusted α Level</th>
<th>Significant?</th>
</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td>p1 = 0.000</td>
<td>α1 = 0.0024</td>
<td>Yes</td>
</tr>
<tr>
<td>24</td>
<td>p2 = 0.000</td>
<td>α2 = 0.0025</td>
<td>Yes</td>
</tr>
<tr>
<td>27</td>
<td>p3 = 0.000</td>
<td>α3 = 0.0026</td>
<td>Yes</td>
</tr>
<tr>
<td>28</td>
<td>p4 = 0.001</td>
<td>α4 = 0.0028</td>
<td>Yes</td>
</tr>
<tr>
<td>15</td>
<td>p5 = 0.008</td>
<td>α5 = 0.0029</td>
<td>Marginal*</td>
</tr>
<tr>
<td>9</td>
<td>p6 = 0.021</td>
<td>α6 = 0.0031</td>
<td>Marginal*</td>
</tr>
<tr>
<td>26</td>
<td>p7 = 0.060</td>
<td>α7 = 0.0033</td>
<td>No</td>
</tr>
<tr>
<td>22</td>
<td>p8 = 0.111</td>
<td>α8 = 0.0036</td>
<td>No</td>
</tr>
<tr>
<td>14</td>
<td>p9 = 0.133</td>
<td>α9 = 0.0038</td>
<td>No</td>
</tr>
<tr>
<td>23</td>
<td>p10 = 0.188</td>
<td>α10 = 0.0040</td>
<td>No</td>
</tr>
</tbody>
</table>

* These p-values would have been significant if α had been 0.05.

participants agreed more strongly than the Western elderly participants that hearing loss is a natural part of getting old (item #15). Table 3.3 presents the ranking of the first ten items and their significance test results in accordance with Holm's Method (the remaining items were omitted, since they were not statistically significant).

Addressing the general hypotheses according to which the items were grouped (see research questions #1 and #2 in Chapter One and the relevant analysis procedures in Chapter Two), the results are as follows: For hypothesis 1a, which addressed participants' understanding of the causes of hearing loss and their control over these, significant differences were found for only one of the six items (#21) using Holm's Method but three out of six (#9, #15, and #21) using a more liberal α = 0.05. Thus, there is only partial support for this hypothesis. For hypothesis 1b, which addressed participants' perceived social stigmatization of hearing loss, no significant differences were found for any of the
four items even when using a more liberal $\alpha = 0.05$. Thus, there is no support for this hypothesis. For hypothesis 1c, which addressed participants’ opinions about whether hearing loss is a health problem, no significant differences were found for any of the two items even when using a more liberal $\alpha = 0.05$. Thus, there is no support for this hypothesis. For hypothesis 1d, which addressed participants’ opinions about whether hearing loss negatively affects quality of life, no significant differences were found for any of the four items even when using a more liberal $\alpha = 0.05$. Thus, there is no support for this hypothesis. For hypothesis 2a, which addressed participants’ beliefs regarding factors that might constitute obstacles to using hearing aids, significant differences were found for two of the five items (#24 and #27) using both Holm’s Method and a more liberal $\alpha = 0.05$. Thus, there is only partial support for this hypothesis. Finally, for hypothesis 2b, which addressed participants’ opinions about the helpfulness of family members and the necessity of seeking professional attention in dealing with hearing loss, significant differences were found for only one of the four items (#28) using both Holm’s Method and a more liberal $\alpha = 0.05$. Thus, there is only partial support for this hypothesis.

**CHINESE VS. WESTERN II: THOSE WHO REPORTED HEARING LOSS**

For those participants who reported themselves to have a hearing loss by indicating “Yes” on Item #29 of the questionnaire (“Do you have a hearing loss?”), the same independent samples $t$-test procedure was utilized to investigate whether there were differences in the response patterns between these subgroups of Chinese and Western participants for the same 21 items mentioned above plus the additional seven items included in the hearing-impaired-only section of the questionnaire. Table 3.4 details the
<table>
<thead>
<tr>
<th>Survey Item Number</th>
<th>Chinese-Canadians With HL</th>
<th>Euro-Canadians With HL</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>4.17 (1.17)</td>
<td>4.33 (1.14)</td>
</tr>
<tr>
<td>9</td>
<td>3.67 (1.37)</td>
<td>4.39 (1.61)</td>
</tr>
<tr>
<td>10</td>
<td>3.83 (1.47)</td>
<td>3.56 (1.34)</td>
</tr>
<tr>
<td>11</td>
<td>2.83 (1.72)</td>
<td>3.39 (1.24)</td>
</tr>
<tr>
<td>12</td>
<td>3.00 (1.67)</td>
<td>2.94 (1.39)</td>
</tr>
<tr>
<td>13</td>
<td>1.67 (.82)</td>
<td>2.11 (.96)</td>
</tr>
<tr>
<td>14</td>
<td>2.50 (1.22)</td>
<td>3.17 (1.25)</td>
</tr>
<tr>
<td>15</td>
<td>4.33 (1.21)</td>
<td>3.22 (1.31)</td>
</tr>
<tr>
<td>16</td>
<td>4.00 (1.10)</td>
<td>4.12 (.99)</td>
</tr>
<tr>
<td>17</td>
<td>1.67 (.82)</td>
<td>2.83 (1.20)</td>
</tr>
<tr>
<td>18</td>
<td>2.17 (1.47)</td>
<td>1.76 (1.30)</td>
</tr>
<tr>
<td>19</td>
<td>3.00 (1.55)</td>
<td>3.47 (1.12)</td>
</tr>
<tr>
<td>20</td>
<td>4.00 (1.26)</td>
<td>4.18 (.95)</td>
</tr>
<tr>
<td>21</td>
<td>2.67 (.52)</td>
<td>2.28 (1.07)</td>
</tr>
<tr>
<td>22</td>
<td>2.33 (1.51)</td>
<td>2.61 (1.29)</td>
</tr>
<tr>
<td>23</td>
<td>4.33 (.82)</td>
<td>4.39 (1.04)</td>
</tr>
<tr>
<td>24</td>
<td>4.17 (1.17)</td>
<td>3.33 (1.24)</td>
</tr>
<tr>
<td>25</td>
<td>1.83 (.98)</td>
<td>1.94 (1.39)</td>
</tr>
<tr>
<td>26</td>
<td>3.83 (1.47)</td>
<td>2.78 (1.31)</td>
</tr>
<tr>
<td>27</td>
<td>4.17 (1.17)</td>
<td>2.67 (1.08)</td>
</tr>
<tr>
<td>28</td>
<td>3.50 (1.76)</td>
<td>2.28 (1.32)</td>
</tr>
<tr>
<td>32</td>
<td>4.33 (1.21)</td>
<td>3.89 (1.08)</td>
</tr>
<tr>
<td>33</td>
<td>4.33 (1.21)</td>
<td>4.28 (.67)</td>
</tr>
<tr>
<td>34</td>
<td>2.17 (1.17)</td>
<td>2.61 (1.29)</td>
</tr>
<tr>
<td>35</td>
<td>4.50 (.84)</td>
<td>3.83 (1.20)</td>
</tr>
<tr>
<td>36</td>
<td>1.67 (1.21)</td>
<td>1.83 (1.29)</td>
</tr>
<tr>
<td>37</td>
<td>4.50 (.84)</td>
<td>3.39 (1.38)</td>
</tr>
<tr>
<td>38</td>
<td>3.17 (1.72)</td>
<td>2.89 (1.71)</td>
</tr>
</tbody>
</table>

1 On a Likert scale of 1 to 5, where 1 means "strongly disagree," 3 means "neutral/not sure," and 5 means "strongly agree."

2 Chinese-Canadians with hearing loss N = 6; Euro-Canadians with hearing loss N = 18.
mean ratings and standard deviations of these two subgroups of participants’ responses to each of these 28 items, and Table 3.5 presents the associated t-test results along with their corresponding questionnaire statements for the items for which responses were marginally significantly different (complete results can be found in Appendix D). None of these 28 comparisons was found to be statistically significant with the adjusted \( \alpha \) levels according to Holm’s Method. However, the ranking’s top two items with the smallest \( p \)-values, \#27 \((p = 0.009)\) and \#17 \((p = 0.039)\), could be considered to exhibit “marginally” significant response differences, since even though they failed the test according to Holm’s Method, their \( p \)-values were still smaller than the more liberal \( \alpha = 0.05 \). This finding, along with the mean ratings for those two items, could suggest that 1) the Chinese-Canadian elderly participants who reported a hearing loss were more likely than the Euro-Canadian elderly participants who reported a hearing loss to think it best not to wear hearing aids all day long (item \#27); and 2) the Chinese-Canadian elderly participants who reported a hearing loss tended to disagree more strongly than the Euro-Canadian elderly participants who reported a hearing loss that people with a family history of hearing loss are more likely to develop hearing loss themselves (item \#17).

Table 3.6 presents the results of ranking and significance testing in accordance with Holm’s Method (only eight comparisons are shown, as the remaining comparisons have \( p \)-values that were clearly nonsignificant).

Addressing the general hypotheses according to which the items were grouped and applying them to the subgroups of participants who reported a hearing loss (see research question \#4 in Chapter One and the relevant analysis procedures in Chapter Two), the results are follows: For hypothesis 1a, which addressed participants’ understanding of the causes of hearing loss and their control over these, no significant differences were found
TABLE 3.5
Independent Samples t-Test Results Comparing Responses to Items #8 - #28, #32 - #38 for Which There Was a Marginally Significant Difference\(^1\), by Chinese-Canadian and Euro-Canadian Participants\(^2\) Who Reported Hearing Loss

<table>
<thead>
<tr>
<th>Survey Statements</th>
<th>(t)</th>
<th>(df)</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>#17 “People with family members who have hearing loss are more likely to develop hearing loss.”</td>
<td>-2.200</td>
<td>22</td>
<td>.039</td>
</tr>
<tr>
<td>#27 “It is best not to wear hearing aids all day long; allowing the ears to rest throughout the day is a good way to preserve one’s remaining hearing.”</td>
<td>2.881</td>
<td>22</td>
<td>.009</td>
</tr>
</tbody>
</table>

\(^1\) Results for all items can be found in Appendix D.

\(^2\) Chinese-Canadians with hearing loss \(N = 6\); Euro-Canadians with hearing loss \(N = 18\).

TABLE 3.6
Ranking and Significance of \(t\)-Test \(p\)-Values According to Holm’s Method for Comparisons Between the Chinese and Western Cultural Subgroups with Reported Hearing Loss

<table>
<thead>
<tr>
<th>Survey Item Number</th>
<th>Ranking &amp; (p)-Values</th>
<th>Adjusted (\alpha) Level</th>
<th>Significant?</th>
</tr>
</thead>
<tbody>
<tr>
<td>#27</td>
<td>(p_1 = 0.009)</td>
<td>(\alpha_1 = 0.0018)</td>
<td>Marginal*</td>
</tr>
<tr>
<td>#17</td>
<td>(p_2 = 0.039)</td>
<td>(\alpha_2 = 0.0019)</td>
<td>Marginal*</td>
</tr>
<tr>
<td>#37</td>
<td>(p_3 = 0.078)</td>
<td>(\alpha_3 = 0.0019)</td>
<td>No</td>
</tr>
<tr>
<td>#15</td>
<td>(p_4 = 0.081)</td>
<td>(\alpha_4 = 0.0020)</td>
<td>No</td>
</tr>
<tr>
<td>#9</td>
<td>(p_5 = 0.083)</td>
<td>(\alpha_5 = 0.0021)</td>
<td>No</td>
</tr>
<tr>
<td>#28</td>
<td>(p_6 = 0.084)</td>
<td>(\alpha_6 = 0.0022)</td>
<td>No</td>
</tr>
<tr>
<td>#26</td>
<td>(p_7 = 0.111)</td>
<td>(\alpha_7 = 0.0023)</td>
<td>No</td>
</tr>
<tr>
<td>#24</td>
<td>(p_8 = 0.162)</td>
<td>(\alpha_8 = 0.0024)</td>
<td>No</td>
</tr>
</tbody>
</table>

* These \(p\)-values would have been significant if \(\alpha\) had been 0.05.

for any of the six items using Holm’s Method, but significant difference was found for one of the six items (#17) using a more liberal \(\alpha = 0.05\). Thus, there is limited support for this hypothesis. For hypothesis 1b, which addressed participants' perceived social stigmatization of hearing loss, no significant differences were found for any of the six
items even when using a more liberal \( \alpha = 0.05 \). Thus, there is no support for this hypothesis. For hypothesis 1c, which addressed participants' opinions about whether hearing loss is a health problem, no significant differences were found for any of the three items even when using a more liberal \( \alpha = 0.05 \). Thus, there is no support for this hypothesis. For hypothesis 1d, which addressed participants' opinions about whether hearing loss negatively affects quality of life, no significant differences were found for any of the five items even when using a more liberal \( \alpha = 0.05 \). Thus, there is no support for this hypothesis. For hypothesis 2a, which addressed participants' beliefs regarding factors that might constitute obstacles to using hearing aids, no significant differences were found for any of the seven items using Holm's Method, but significant difference was found for one of the seven items (#27) using a more liberal \( \alpha = 0.05 \). Thus, there is very minimal support for this hypothesis. Finally, for hypothesis 2b, which addressed participants' opinions about the helpfulness of family members and the necessity of seeking professional attention in dealing with hearing loss, no significant differences were found for any of the five items even when using a more liberal \( \alpha = 0.05 \). Thus, there is no support for this hypothesis. Note that the small and unbalanced sample sizes (six Chinese-Canadians and 18 Euro-Canadians) used for these comparisons were also a likely contributing factor for the null results.

**HOMOGENEITY OF EXPERIMENTAL GROUPS**

It is important that the survey data obtained and the analyses performed above truly represent the broader cultural beliefs towards hearing impairment for both the Chinese- and Euro-Canadian participants rather than other mediating variables. Consequently, tests were performed to investigate the supposed homogeneity of response patterns within each
cultural group. To do this, the investigator looked into the demographic data in an effort to see whether there were any variables that could potentially divide the participants in each culture into two or more subgroups that corresponded to response patterns.

The Chinese group was divided into subgroups, first, by using the gender variable and second, by using the years-of-residence-in-Canada variable. The effect of years of residence in Canada was tested twice using two different schemes of division: First, the Chinese group was divided into two subgroups along the median of 5.0 years in Canada, and second, it was divided into three subgroups, those residing in Canada for 1) two or fewer years, 2) more than two years but fewer than ten years, and 3) ten or more years. For each variable, independent samples t-tests were performed to compare the mean ratings across the resulting subgroups. In the case of the last scheme of division, only the two subgroups of Chinese participants residing in Canada for two or fewer years and of those residing for ten or more years were selected for the t-test, because they represented the two extreme ends of lengths of residence in Canada for this group of Chinese immigrants. The resultant p-values from each set of comparisons were ranked using Holm's Method to determine their statistical significance. The results showed that none of the 21 questionnaire items had a significant mean rating difference between the subgroups of Chinese participants. Even if one set the \( \alpha \) to the less conservative 0.05, significant subgroup response differences were only found for one item (#17, \( p = 0.033 \)) for the gender variable, for one item (#21, \( p = 0.011 \)) for the length-of-residence variable with division along the median, and for two items (#22, \( p = 0.004 \) and #24, \( p = 0.003 \)) for the length-of-residence variable taking the two extreme ends. This suggests that neither gender nor years of residence in Canada (measured two ways) were mediating variables affecting the homogeneity of response patterns in the Chinese cultural group.
There was no valid basis for dividing the Chinese-Canadian participants into subgroups according to place of birth or language. Because China endured extensive periods of political instability and large-scale warfare during the last century (e.g., World War II and the Nationalist-Communist Chinese Civil War), many Chinese people were forced to take up refuge in nearby places such as Hong Kong, Taiwan, and Singapore, and therefore, for the older Chinese generation, place of birth does not necessarily equate to the socio-cultural environment in which a person grew up. Moreover, the data obtained from the questions about languages spoken at home did not yield distinctive subgroups, and only two of the Chinese participants indicated that they use English as one of the secondary languages spoken at home. These historical and statistical reasons were indications that neither place of birth nor languages spoken at home were suitable demographic factors to divide the Chinese group into two or more subgroups.

A careful examination of the demographics of the Western group suggested that participants in this group were less varied in terms of their places of birth, lengths of residence in Canada (or the U.S., as was the case for two Western participants), and languages commonly spoken at home. Therefore, only gender was deemed to be the potential mediating factor dividing the Western participants into two subgroups. Again, independent samples t-tests and Holm's Method were employed to compare the mean ratings between the two resulting subgroups. The results showed that none of the questionnaire items had a statistically significant mean rating difference in this set of comparisons, even if one switched the $\alpha$ to the less conservative 0.05. This suggests that gender was unlikely to be a mediating variable affecting the homogeneity of response patterns in the Western cultural group.

On the other hand, the demographic data collected by the questionnaire revealed that
while none of the Chinese participants was above the age of 79 years, six of the Western participants indicated that they belonged in the 80-89 years age group. To rule out the possibility that this group of older Western elderly participants could systematically respond to the questionnaire items differently from the rest of the Western participants and ultimately contribute to the observed significant mean rating differences between the two cultural groups, the Western group was divided into two new subgroups, with one subgroup being the six Western participants who were in the 80-89 years age group and the other subgroup being the rest of the Western participants. Independent samples t-tests were performed to compare the mean ratings for each item between these two subgroups. The results showed that none of the 21 questionnaire items had a significant mean rating difference between the two Western subgroups using strict α levels determined by Holm’s Method. When the α was set at the less conservative 0.05, significant subgroup response differences were found for only two items (#21, \( p = 0.004 \) and #25, \( p = 0.006 \)). For item #21, where a significant mean rating difference was also found between the Chinese and Western participants, the mean rating of the six older Western participants (3.17) was much closer to that of the Chinese group as a whole (3.33); for item #25, where no significant mean rating difference was also found between the two cultures, the mean rating for this item of the 24 younger Western participants (1.46) was more similar to that of the Chinese group as a whole (1.67). These findings suggest that the differential age group distributions between the Chinese and Western participants were unlikely to be a mediating factor contributing to the statistical comparison results obtained between the two cultural groups.
TABLE 3.7
Summary Statistics of All Chinese-Canadian and Euro-Canadian Participants’ Responses to Questionnaire Items #29 - #31

<table>
<thead>
<tr>
<th>Yes/No Survey Questions</th>
<th>Chinese (N = 30)</th>
<th>Western (N = 30)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of Responses</td>
<td>Number of Responses</td>
</tr>
<tr>
<td></td>
<td>“Yes”</td>
<td>“No”</td>
</tr>
<tr>
<td>#29 “Do you have a hearing loss?”</td>
<td>6</td>
<td>20</td>
</tr>
<tr>
<td>#30 “Do you know what audiologists do?”</td>
<td>10</td>
<td>13</td>
</tr>
<tr>
<td>#31 “Have you ever worn a hearing aid?”</td>
<td>0</td>
<td>30</td>
</tr>
</tbody>
</table>

SUMMARY OF RESPONSES TO ITEMS #29, #30, AND #31

The frequency of each response category (i.e., “Yes”, “No”, and “Not Sure”) to each of the three yes-no questions in the survey between the two cultural groups is summarized in Table 3.7. These frequencies yielded a few interesting differences between the Chinese and Western participants: While six Chinese elderly participants perceived themselves to have certain degrees of hearing impairment, only one of them reported that he/she knew for sure what audiologists do, and none of them reported themselves ever to have worn a hearing aid before. On the other hand, while 18 Western elderly participants in the current study reported themselves to experience some degree of hearing loss, 11 of these elderly participants (61%) also indicated that they knew about who audiologists are, and nine (50%) indicated that they have worn hearing aids before. Concerning item #30, while two thirds of the Chinese participants answered “No” or “Not Sure” in response to the question “do you know what audiologists do?,” only close to one third of the Western participants answered “No” or “Not Sure” in response to the same question.

75
Chapter Four
Interview Results

This chapter deals with the compilation of verbal data obtained from follow-up interviews with a subgroup of participants from both cultural groups and links these qualitative data to the quantitative results discussed in detail in Chapter Three. A total of eight Chinese-Canadian and seven Euro-Canadian participants consented to participate in the extra interview session following the completion of their questionnaire forms. The participant codes representing each interviewee, along with their responses on items #29, #30, and #31 and selected interview conditions are summarized in Table 4.1. As mentioned in Chapter Two, two of the Chinese interviewees (C2 and C6) required the assistance of an interpreter (a different person for each interviewee). Four of the interviewees (two from the Chinese group and two from the Western group) requested to have the interview done over the phone, but all of the remaining interviewees met with the interviewer in person, and the entire interview conversation was audiotaped by a digital voice recorder. This resulted in two different methods of interview data acquisition. However, a preliminary analysis of the information from both methods revealed that, although the length of the dialogue tended to be shorter for those interviews administered over the phone, the patterns of response and the types of information provided by the respondents were very similar across the two interview methods. The lengthier interview from the face-to-face sessions reflects the fact that most participants appeared to be more relaxed when they were actually given a chance to “sit down and chat” with the
### TABLE 4.1
Overview of Key Characteristics of the Interviewees from Both Cultural Groups

<table>
<thead>
<tr>
<th>Interviewee</th>
<th>Gender</th>
<th>Reported a Hearing Loss?</th>
<th>Knew about Audiologists?</th>
<th>Wore Hearing Aid(s)?</th>
<th>Interpreter Present at Interview?</th>
<th>In Person or Over the Phone?</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1</td>
<td>F</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>telephone</td>
</tr>
<tr>
<td>C2</td>
<td>F</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes-Taiwanese</td>
<td>in person</td>
</tr>
<tr>
<td>C3&lt;sup&gt;a&lt;/sup&gt;</td>
<td>F</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>in person</td>
</tr>
<tr>
<td>C4&lt;sup&gt;a&lt;/sup&gt;</td>
<td>M</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>in person</td>
</tr>
<tr>
<td>C5</td>
<td>F</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>telephone</td>
</tr>
<tr>
<td>C6&lt;sup&gt;*&lt;/sup&gt;</td>
<td>F</td>
<td>Yes</td>
<td>No</td>
<td>Yes-Cantonese</td>
<td>No</td>
<td>in person</td>
</tr>
<tr>
<td>C20&lt;sup&gt;b&lt;/sup&gt;</td>
<td>M</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>in person</td>
</tr>
<tr>
<td>C21&lt;sup&gt;b&lt;/sup&gt;</td>
<td>F</td>
<td>No</td>
<td>Not Sure</td>
<td>No</td>
<td>No</td>
<td>in person</td>
</tr>
<tr>
<td>W1&lt;sup&gt;c&lt;/sup&gt;</td>
<td>M</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>in person</td>
</tr>
<tr>
<td>W2&lt;sup&gt;c&lt;/sup&gt;</td>
<td>F</td>
<td>Yes</td>
<td>Not Sure</td>
<td>No</td>
<td>No</td>
<td>in person</td>
</tr>
<tr>
<td>W10</td>
<td>F</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>in person</td>
</tr>
<tr>
<td>W14</td>
<td>F</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>telephone</td>
</tr>
<tr>
<td>W18&lt;sup&gt;d&lt;/sup&gt;</td>
<td>F</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>telephone</td>
</tr>
<tr>
<td>W19&lt;sup&gt;d&lt;/sup&gt;</td>
<td>M</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>in person</td>
</tr>
<tr>
<td>W22</td>
<td>M</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>in person</td>
</tr>
</tbody>
</table>

* Due to the need for an interpreter and other circumstantial factors, there was only enough time for C6 to answer some of the interview questions listed on the script. Nevertheless, for those questions C6's answers were still incorporated into the summaries. That is why the phrases "of the seven Chinese interviewees" and "of the eight Chinese interviewees" are used in the summaries.

<sup>a</sup> Spouse also a participant.  
<sup>b</sup> Spouse also a participant.  
<sup>c</sup> Spouse also a participant.  
<sup>d</sup> Spouse also a participant.

The interviewer and often interrupted the interview with interesting inquiries and comments that had very little to do with the research questions (e.g., "Do you know where's a good place to get hearing aids?" and "Let me tell you a little bit about my husband's career history"). An additional piece of information relevant to the analysis is that the participants who agreed to take part in the interview included four married couples: C3 and C4, C20 and C21, W1 and W2, as well as W18 and W19. There are two couples from...
each cultural group.

As discussed in Chapter Two, an interview script was developed based on the written questionnaire, its primary function to give the respondents an opportunity to express their reasons behind choosing “agree/disagree” or “yes/no” for a subset of statements/questions that appeared on the questionnaire. The remainder of this chapter is a report of the interview results, summarized in sections according to their topics and ordered in the same sequence as the questions were asked during a typical session. To link these interview data to the questionnaire results, each section title contains the questionnaire item number corresponding to the summary prepared for that section, followed by an indicator of the topic of the section. The results of the statistical analyses detailed in Chapter Three are also mentioned in the summary in those instances in which the corresponding questionnaire item showed a significant quantitative difference between the Chinese and the Western cultural groups.

INTERVIEW SUMMARIES

Item #30: The Role of Audiologists and Other Hearing Care Professionals

All of the seven Chinese participants who responded to this question expressed their lack of knowledge about the profession of audiology. In fact, all of them said that before doing the questionnaire, they had never heard the term “audiologist” before. However, all of them speculated that hearing loss should be treated by some kind of medical doctor, and four of them also mentioned the term “ear-nose-throat doctor” (ENT). Being a long-time physician herself, C21 said, “Even though I am a medical doctor, I am not too sure what the profession [of audiology] is all about, and most of the time we think of ENT – I think hearing is probably part of the ENT’s job?” Only two of the Chinese
interviewees brought traditional Chinese doctors up as part of their answers, but even then they were both very doubtful whether Chinese doctors could help with hearing loss. C5 said, “Traditional Chinese doctors? I don’t really know, but there is a possibility that they could also help?”

In contrast, the answers given by the Western participants were very different from those of Chinese participants. Four of the seven Western interviewees are quite familiar with the role of audiologists, because not only do they admit that they have a hearing loss, all of them have also visited some type of hearing clinic for a hearing evaluation and other related audiological services. In fact, three of the four are actually long-time hearing aid users. For example, W10 said, “I have been wearing hearing aids, oh, off and on for, maybe eight years . . . Well, all I know about them is, they test your hearing and help you find the hearing aids that are suitable – that’s about everything I know of the audiologists.” The remaining three Western interviewees did not have first-hand experience with audiologists, but they all indicated that they know “enough” about the audiologist simply by talking to their spouse, relatives, or friends who have a hearing loss. W18 explained, “I’ve never gone to an audiologist, but my husband goes to a small hearing aid clinic. I think they do ear tests, check your ears, and see how much capacity is left of your ears – both the low and high pitches.”

**Item #31: Where Can You Buy a Hearing Aid?**

Interestingly, although three of the eight Chinese interviewees openly admitted that they have a hearing problem, none of the Chinese interviewees knew the exact locations where one can purchase a hearing aid in Canada, let alone who is qualified to dispense and fit hearing aids. Three of the seven Chinese respondents who answered this question
mentioned that medical doctors would probably know where to buy one, and that they
would just follow the doctor's recommendations if one day they really needed a hearing
aid. While admitting having trouble hearing sometimes, C1 said, "I don’t know where to
buy a hearing aid at all, but there are a lot of doctors in my church, so I can just ask them
if someday I can’t hear anymore.” Another three of the Chinese respondents speculated
that one could probably buy hearing aids in some kind of specialized medical equipment
stores in China or Taiwan. C20 said, thoughtfully, "Doctors will tell you where to buy
hearing aids . . . In China there are stores specialized in hearing aids, but the people
selling hearing aids there are not doctors – they are just salespeople, showing you
different models of hearing aid with no professional training whatsoever."

On the other hand, four of the seven Western interviewees understand that someone
who can do an accurate hearing evaluation should fit the hearing aids. Moreover, W10,
W14, and W19 had personal experience with hearing aids, so they also know the exact
locations where hearing aids can be bought. However, not everyone who has been to a
hearing aid clinic knows the credentials or the qualifications of the staff in those clinics.
W19 said, somewhat humourously, "I go to a small hearing aid clinic, and I think the guy
there does a good job, but I can’t remember what his training is now – I think I lost his
business card.” W22 is the only participant who gave a very different answer from
everybody else, suggesting that even in the Western world, not everyone is fully aware of
the current delivery system of hearing care services: "Oh, um, pharmacists, I guess,
would be trained in it . . . I would think, I would, I would start there if I had to, but then
the doctor would send you somewhere, he would tell you where to go.”
Item #9: The Relationship between Past Careers and Presbycusis

Regardless of their cultural background, all interviewees, except one Chinese woman (C2), believe to a certain degree that past jobs influence the development of hearing loss in old age. Most of the interviewees mentioned that working in a noisy environment for long periods of time somehow damages hearing. Four of the seven Chinese interviewees who agreed with the statement also mentioned that soldiers working as artillery officers often have poor hearing. For example, C4 described his own personal experience during the Chinese Civil War: "After firing one round of artillery shells, my eardrums where filled up with blood, and I went almost completely deaf for two months, during which period I could only communicate by writing. After two months, fortunately my hearing gradually recovered, and right now I can still hear the ticking sounds of my alarm clock very clearly." With C4's comment in mind, it is very interesting to note that C3, C4's wife, told the interviewer during her own session that she thinks her husband's hearing is quite poor, but he would never admit it to anyone. In contrast to other interviewees, as the only dissenter, C2 thinks hearing loss is mostly due to physical illnesses and is not related to past occupations at all, but she did not provide any explanation as to why she felt this way.

The responses provided by one of the Western couples are typical answers for the group of seven Western interviewees. W18 said, "I used to work in a quiet office, but my husband worked in a very noisy environment, which damaged his hearing I think." W19 affirmed his wife's comment by saying, "I worked with heavy equipment, and lots of noise came out from big machines. You know, after certain years and certain loudness of noise exposure, it can really damage your hearing."

The two cultures' mean ratings to item #9 in the questionnaire were more dissimilar
than their interview responses summarized above. Although both the Chinese-Canadian
\( M = 3.80 \) and the Euro-Canadian \( M = 4.40 \) groups expressed an agreement with the
statement “the kinds of jobs people have throughout their lifetime influence the
development of hearing loss in old age,” it is clear that the Western group on average
tends to agree more strongly than the Chinese group. The mean difference turned out to
be “marginally” significant \( (p = 0.021) \), because while the \( p \)-value is not significant using
a stricter \( \alpha \) determined by Holm’s Method, it would have been significant if the more
liberal \( \alpha \) level of 0.05 had been chosen for the analysis. On the other hand, a careful
examination of item #9’s individual rating scores from all participants in the Chinese
group revealed that, while the vast majority of Chinese participants selected either
“agree” or “strongly agree” in response to this statement, the scores from merely four
Chinese participants (including C2) who selected either “disagree” or “strongly disagree”
apparently exerted a skewing effect on the average rating and resulted in the observed
mean rating difference between the two cultural groups.

**Item #12: Is Hearing Loss a Health Problem?**

Five of the seven Chinese interviewees who answered this question think hearing
loss is indeed a health problem. Some of the five Chinese interviewees supported their
claim by saying that hearing loss is generally due to diseases of the body or the ears,
while others said that traumatic accidents and loss of normal organ function could also
cause hearing loss. C2 vividly explained this point, “Hearing loss could be due to
something like the fever, and when your body is weak, it influences your ears . . . Fever
can ‘burn’ your ears when not treated properly.” Interestingly, C20’s answer to this
question may help shed some light on the way some Chinese elderly participants
conceptualize the term “health problem”: “Hearing loss is definitely a health problem – you see, when you have a hearing loss, you cannot communicate with other people at all, and when other people talk to you, they need to speak very loudly, but still, you cannot hear them.” The remaining two Chinese interviewees, however, do not think hearing loss is necessarily a health problem; it could be just a part of the normal aging process. For example, C4 speculated, “No, I don’t think hearing loss is necessarily a health problem, but it could still be, because health conditions would affect hearing, but not always. . . . I do agree that hearing loss is, to some degree, part of the aging process, but not absolutely, because not every elderly person gets hearing loss.”

On the other hand, only three of the seven Western interviewees firmly believe that hearing loss is considered a health problem. Relating to his personal experience, W1 explained, “Hearing loss is a health problem, in that it makes it hard for you to know what direction people are talking to you from, or you turn quickly because you’re trying to find where people are, and maybe lose your balance, or it’s, but it’s a health problem in that it curtails your lifestyle to a certain extent, because you can’t always hear what people are saying, or, especially I find if I’m in a crowd, I can’t always catch what people are saying.” W22 said, “I do agree that hearing loss is a health problem, because, well, it’s part of your body, and if it can’t be fixed, there are hearing aids to help you. It is something that will affect your health.” The remaining four interviewees disagree that hearing loss is a real “health problem,” for various reasons. W2 said, somewhat hesitantly, “I don’t think hearing loss is a health problem – it really depends on how you define ‘health problem’. It’s really a health problem in a way, but not one of the health problems that will take your life, such as cancer. I am not sure how you’d define it.” W14 asserted, “For some, hearing loss might be a health problem, but for others it might just be an age
problem.” W19 tossed the question back: “Why would hearing loss bother your health? I mean, it could bother other people, but that’s a communication problem.”

Item #13: The Relationship between Diet Patterns and Presbycusis

There is no surprise that none of the Western interviewees think the types of food one consumes have any bearing on the development of hearing loss. Only two of the eight Chinese interviewees think some types of food do affect hearing directly. This view is exemplified by C2’s comments: “I don’t think ‘hot’ and deep-fried foods would be good for hearing, since they make your body go into an unbalanced ‘hot’ state, which is not good for your health in general.” However, when it comes to hearing, most Chinese participants interviewed mentioned that they have never heard any type of food that could adversely affect the ears. C3 explained, “I don’t agree with the statement ‘food affects hearing’, because food, it’s impossible that you eat the same thing everyday, so even for those food-induced diseases, they are due to a very long-term deficiency in certain categories of food, and it has to be longer than three, five years to have an impact.”

Item #10: Disclose Hearing Problems to Non-Family Members or Not?

Six of the seven Chinese interviewees who responded to this question think it is unlikely that any hearing-impaired people would want to discuss their hearing problem with any “outsiders.” For example, C5 put it this way: “No need to really ‘discuss’ it with other people, but will let outsiders ‘know’ that I have a hearing loss, but even for that matter, I think just my family doctor will suffice.” Most of the Chinese participants agree that since hearing loss is considered a physical defect, naturally you would not want to let others know you have this weakness. On the topic of whether this kind of attitude is
specific to Chinese people or not, C3 talked about it bluntly: “So, Chinese people usually like to ‘hide’ their diseases, are afraid of other people’s gossip, like what happened to my husband when he got cancer several years ago . . . This aspect of Chinese culture is very scary, yes, even for me, especially when you’re talking about elderly Chinese males, they are always very stubborn!” C4 is the only Chinese interviewee who offered a different opinion: “It’s not necessarily true that hard-of-hearing people don’t like to talk about it with people outside the family, because this is just a bodily defect and is nothing too shameful to hide from other people . . . If you tried to hide your handicaps, then you must have some psychological problems.”

Unlike the Chinese group, the answers from the seven Western interviewees are much more mixed. Three of them think in a way similar to the majority of the Chinese participants. W22 said, “No, that’s right, they, they don’t really want to . . . they don’t seem to want to admit they have the problem . . . I know, I know some ladies who don’t want to admit it, because they don’t want a hearing aid that shows.” Another three Western interviewees chose “not sure” for this question, either because they do not have a hearing loss themselves or because they think it depends on the situation. W14 speculated, “I think of myself, if [the hearing loss] affects you in younger years, then you might be embarrassed, but I still don’t think hearing loss is a stigma, I mean, I can even laugh a bit about it.” W1 is the only person who truly disagrees that people who have a hearing loss do not like to discuss it with someone outside their family. Drawing from his personal experience, W1 said, “I don’t mind telling people I do have hearing loss, because otherwise they don’t really know a lot of words I don’t hear very clearly – like sometimes I can’t really tell the difference between ‘fourteen’ and ‘forty’ . . . I, I, I’d certainly let people know that I’m having the difficulty, and then they can understand why I’m
straining or turning my head to try to hear the words, because I can hear better on this side than this side.”

**Item #18: Would Hard-of-Hearing Seniors Lose Respect?**

All of the seven Western interviewees think that children and grandchildren should be able to understand the difficulties associated with hearing loss, and that elderly people should not lose their families' respect if they talk openly about their hearing problems. Some people, like W19, tried to elaborate their answers by saying, “Well, I guess sometimes you do lose a certain degree of respect from them if you have a hearing loss, in the sense that maybe they won’t like to visit or talk to you as often.” Much like the Western group, all of the Chinese interviewees disagree with the idea that children and grandchildren will start disrespecting their elderly relatives at home if they find out some of the elderly relatives have a hearing loss. However, unlike the Western group, some Chinese participants not only asserted that the younger generations should not do that (i.e., disrespect their elders), they also suggested practical ways the younger generations can actually help their hard-of-hearing elderly family members. C2 said, quite emphatically, “How could an old person’s own children and grandchildren not pay attention to him just because he has a hearing loss? Impossible!” C3 said, “I don’t think there’s any relationship between hearing loss and the loss of respect. Today some young kids don’t want to respect their parents, even if their hearing is great, but according to the traditional Confucian teaching of filial piety, even when parents acquire some diseases, the children should still respect them.” C4 suggested, “If your parents or older generations at home are suffering from hearing impairment, then you have to understand that, try your best to facilitate the communications with them, and help them understand what you’re saying.”
Item #22: Changing Diet and/or Lifestyle Can Help With Hearing Loss?

The eight Chinese interviewees’ responses to this question were very mixed: four of them do not believe that any changes in diet or lifestyle can help with hearing loss at all; one of them said it all depends on the length of one’s occupational noise exposure; and the remaining three think that changes in diet patterns and/or lifestyle habits may indeed help to alleviate hearing loss. Generally speaking, those two Chinese participants who believe that food choice has a direct impact on the development of hearing loss also think that changing diet patterns can help improve one’s hearing. C5 said, “Decreasing your intake of those ‘highly stimulating’ foods may help with your hearing loss, but in terms of lifestyles – I don’t think so.” While disagreeing that hearing loss can be reduced by simply changing diet or lifestyle, C6 provided the interviewer with a very insightful answer: “Even though I don’t believe it myself, I know older generations thought that ears are closely linked to the kidneys, so keeping the kidneys refreshed and replenished is a good way to treat hearing loss – that’s a belief in the old days.”

Even though the answers for this question from the Western group were somewhat mixed as well, none of the Westerners thought that changing diet patterns would have any bearing on the existing hearing loss. Most of the responses from the Western interviewees were like that of W18: “Once the damage has been done, there’s not much you can do to cure the loss these days.” However, two of the Western participants do think that changing lifestyle habits may help with the hearing loss, and one of them (W1) gave his reasons in his description: “Well, the diet I don’t really think so, but changing lifestyles may help if people already have a hearing problem. I have found myself, even now working with noisy equipment, like the lawn mower or something, my ears will start to
ring afterwards, but if I remember to put on my earplugs, or earmuffs, then it really helps to reduce the ringing sensation. So that’s what I’m thinking when I talked about changing lifestyle habits, just trying not to irritate the ears too often.”

**Item #23: Consulting a Medical Doctor for Hearing-Impaired Patients**

All of the seven Chinese interviewees who answered this question unequivocally agree with the idea that the best person to consult first about a hearing loss is a medical doctor. Many of the Chinese participants think that doctors trained in the Western medical tradition are experts, accurate in their diagnosis, and effective in their treatments. C5 said plainly, “Doctor is the expert, they know how to treat and diagnose, and I don’t really believe in any of those ‘legendary treatments’, which have not been scientifically proven!” C20 explained, “Going to see a Western doctor would certainly be a good thing – it should be like that, because they are specialists, therefore able to help you understand your own problem, and alleviate your pain associated with hearing loss.”

Two of the seven Western interviewees disagree that hard-of-hearing people should consult a medical doctor first, but for very different reasons. W18 said, “Medical doctors don’t really know what to do these days, they can do a lot for other problems, but just not hearing it seems,” whereas W19 replied, “I don’t think so at all, because as I said, I don’t think hearing loss is a medical problem – after I got the hearing loss, I can still work as well as any other guys.” The other five interviewees agreed that a medical doctor should be the first person a hearing-impaired patient consults. However, unlike the Chinese group, the main reason they gave for this attitude is not because medical doctors are all experts on hearing loss, but because as general practitioners, they have the knowledge and the power to refer you to the right person for your hearing problems. For example, as
W2 said clearly, “Well, because [the medical doctors] can refer you to, to the proper person. Only, only for that reason . . . I don’t think they know a whole lot about [hearing loss], I mean, if it’s not their specialty.”

Item #25: Regarding Hearing-Impaired Children Who Do Well at School

Regardless of their cultural backgrounds, all of the Chinese and Western interviewees in this study disagree that if hard-of-hearing children are already succeeding in school, then they do not really need any treatment for their hearing loss. Most of the interviewees think that it is still important for them to receive proper diagnosis and treatment for their hearing impairment, because there is a possibility that hearing loss at a young age could be reversed, the hearing loss could get worse, or the hearing loss could still be affecting the children’s language learning abilities in ways that are not obvious at first. For example, C6 said, “Well, children are still learning things, so treatment for hearing loss is very important, but in the case of hard-of-hearing senior people – it’s a totally different story.” C20 explained his answer from a slightly different point-of-view: “Because the hearing loss in children could be due to pre-natal or other genetic reasons, so you need to bring them to see a doctor to get some adequate explanations about their hearing loss.” From the Western group, W1 said, “Well, I, I think they need to receive treatment . . . Well, [the hearing-impaired children] may do good, but there may be certain things they’re missing out on, too, I mean they, they may concentrate on the blackboard, or they may lip-read, but if they have hearing loss, they should have it attended to . . . If it’s a music class, they might not hear all the tones, or something like that.” W2 said, “No, well I think, I think that a doctor, I think they should [still seek treatments], whatever can be done, I don’t know, um, you know if it’s really serious, they
should be helped to learn sign language . . . Well yeah, I mean if the child is frustrated in any way.”

**Item #26: Hearing Aids vs. Alternative Therapeutic Methods**

The answers to this question from the eight Chinese interviewees were somewhat polarized, with three participants wanting to go see the medical doctor right away, one participant wanting to try both to see which one could really help her, and four participants willing to give those alternative therapeutic methods (acupuncture, massage therapy, or herbal medicines) a shot first. Those people who would exclusively choose to see the medical doctor may feel that only the conventional physicians have the right skill and equipment to correctly diagnose the degree of the hearing loss, but it does not necessarily mean that those people are totally in favour of wearing a hearing aid to manage the hearing problem. C1 said, “When a person is old and hearing-impaired, there should be no way to cure the problem anymore, but many people told me that hearing aids are not very comfortable acoustically, are physically uncomfortable to wear, and very inconvenient.” For those people who would seek out and try those other therapeutic methods for hearing loss, they generally think that if these methods can cure the hearing problem, then there would be no need to wear the hearing aid, which is merely an artificial prosthesis for your dysfunctional ears. In fact, some of them also believe that acupuncture could relieve the symptoms of hearing loss. C6 said, “I do believe that acupuncture could be effective, because there are a lot of what Chinese called ‘pressure points’ around your body that can cure your hearing impairment.”

Not surprisingly, the majority of the Western interviewees (five out of seven) would not try these alternative therapeutic methods at all even if they have a hearing loss,
mostly because they have never received any information about the efficacy of these treatments against hearing impairment. Being a long-time hearing aid veteran herself, W10 explained, “Probably not, even if the hearing aids turned out unsuccessful . . . Well, I would, I would have to have someone show me that [any of those methods] would be helpful, if someone could prove to me that those would be helpful, then maybe I would try them, but in my thinking, I don’t know, I’ve never heard of anybody being helped that way.” Interestingly, still there are two Western participants who would try these alternative methods first, perhaps giving themselves a hope that they probably would not have to wear hearing aids after all, should they ever become hearing-impaired. After talking to many of her friends, W18 became quite disillusioned about hearing aids: “Because I don’t think hearing aids really help, personally I would try something else first, like acupuncture or Chinese medicine. I haven’t heard too much success with hearing aids.”

Interestingly, even though there are prominent variations in the interview responses between the two cultural groups, quantitative procedures failed to find any statistically significant mean difference for item #26 on the questionnaire ($p = 0.060$), either when the $\alpha$ is set to a level determined by Holm’s Method or the more lenient level of 0.05.

**Item #28: Family Members vs. Rehabilitation Clinicians**

Interviewees from the two cultural groups differ in their opinions towards the survey statement: “In most cases, family members are better able than rehabilitation clinicians (e.g., audiologists) to help a person with hearing loss.” The responses from the seven Chinese participants who answered this question are mixed. While three of them expressed opinions similar to those of the Western group (see the next paragraph), the
other four do think that family members can help the person with hearing loss more, because family members, not the specialists in a hospital, are the ones who interact with the person on a daily basis, so their behaviours have a direct impact on the quality of life of the hard-of-hearing individual. For instances, C1 said, “Younger generations should go visit the old people in their family. Of course doctors should go visit them, too, but for senior people with hearing loss, I don’t think their help would be very effective.” C4 also contended, “Family members should be able to help, because they can assist [the hearing-impaired person] in many ways, like encouraging him and helping him overcome the difficulties associated with hearing loss in everyday life, because if you laugh at [the hearing-impaired person] and ignore him, then he could become emotionally depressed and the entire situation would become worse.”

All of the seven Western interviewees unequivocally disagreed with the statement and did not think family members could provide much help for the hearing-impaired patient. However, three out of the seven did attempt to clarify their answers by saying that while family members can provide emotional support and accommodate the needs of the hearing-impaired person, they lack the professional expertise to really help improve the person’s hearing abilities. For example, W14 told the interviewer, “Well, why should family members know how to treat hearing loss? They can be understanding, can help by speaking louder, slower, distinctly, but to treat hearing loss – I think that’s the specialists’ job.” W1 also holds a very similar point-of-view: “Well, I think the trained people would know more what they’re doing than family members . . . Oh, [family members] can give them emotional support and they can maybe, um, compensate in certain ways, you know, talk louder, or slower, or write things out, but I think, if you’re going to get any, um, real help in terms of improving or being able to hear more, you have to get some kind of, um,
professional equipment.”

The mean ratings given for item #28 on the questionnaire were consistent with the pattern of responses obtained from the interview. The Chinese-Canadian group on average \((M = 3.20)\) tends to somewhat agree with the statement (i.e., family members more helpful), while the Euro-Canadian group on average \((M = 2.03)\) tends to disagree with the statement (i.e., rehabilitation clinicians more helpful). The mean difference between the two groups was also determined to be statistically significant \((p = 0.001)\).

**Item #20: Are Hearing Aids Very Expensive?**

For four of the eight Chinese interviewees, if they were going to buy a hearing aid in Canada, then $700 per aid would be somewhat reasonable, $1500 would still be marginally acceptable, but $3000 would be way too much for a single hearing aid. However, almost all of the Chinese respondents admitted that even a price tag of $700 would still make the hearing aid look awfully expensive and unattractive. C6 told the interviewer a brief but interesting story: “I have a relative who bought a hearing aid for only $100 or so from a doctor here in Canada – I think it must be a hearing aid sale or something?” C4 said, somewhat adamantly, “I agree that most hearing aids are sold with too high a price, and I think they should just be sold with half the price of what it is now. I do believe those manufacturers make a lot of money from this product, well, right now this kind of high-tech commodity should be most concerned about wide accessibility for the general public, because it’s not right to let the manufacturers and doctors monopolize the market and then reap a lot of profit from hapless end users.” C5 is the only Chinese interviewee who would pay a high price to get a good hearing aid (even though she admitted to be hard-of-hearing but has never worn a hearing aid before): “I think, even at
$3000 per aid, if it’s of good quality and high technology, then the money is still worth it.”

Almost all of the Western interviewees also think that most brand-name hearing aids are somewhat overpriced, but compared to the Chinese group, many of them expressed some understanding as to why the hearing aids should be as expensive as they are today. W1 reflected, “The equipment for hearing always seems to be more expensive, and it makes me think that the market is fair, because not many people buy this kind of equipment. Also, hearing aids can be customized.” While W14 does not think hearing aids are cheap, she offered a feasible solution to this problem: “I wish they were cheaper, but maybe that’s not possible. Of course, the WID sells hearing aids for much less.” On the other hand, three of the seven Western interviewees reasoned that if hearing aids could dramatically improve your quality of life, then paying $700 to $1500 for a hearing aid would appear to be quite reasonable.

Items #24 and #37: Do Hearing Aids Really Help People Hear Better?

All of the eight Chinese interviewees who responded to this question think that modern hearing aids are, to a certain extent, effective in helping hearing-impaired individuals hear better. Some of them were also quick to point out that hearing aids, after all, are not a perfect device. C4 reasoned, “Not completely restoring the hearing back to normal, but I do think hearing aids could be of some help . . . Compared to the natural ear, their frequency response is somewhat limited, but maybe that’s already good enough for a hard-of-hearing person.” Three of the interviewees also noted that no matter how technologically advanced hearing aids become, they could never act as a complete substitution for your once-healthy body organs. For example, C20 said, “I do think
hearing aids are effective in helping people, but modern hearing aids still cannot replace the original, normal, and healthy hearing functions, because hearing loss is an abnormal state of the body. No one cannot replace his or her own ears, and the hearing aids are just a supportive device.”

Five of the seven Western interviewees agreed that hearing aids help a lot for those people with a hearing loss, but they also emphasized that hearing aids would never “cure” your hearing problem and bring hearing back to what it was at age 20 years. Two of these five had a positive experience with their own hearing aids as well. W14 said, “Yes, I myself have had a fairly good experience with hearing aids. I think modern technology has gone a long way from just a few years ago, and I think they will just keep becoming better and better.” The other two Western interviewees, however, do not have a hearing loss themselves and heard a lot of negative things about hearing aids from their neighbours and friends. Therefore, their expectations on the outcome of hearing aid treatment are inevitably lower than those of other people. W18 said, “I guess [restoring hearing to normal] is what the aim or goal is, but in reality I don’t think it is the case at all. I have heard and talked to too many people about hearing aids, but very few people say any positive things about hearing aids.”

The average ratings given for item #24 on the survey questionnaire were consistent with the results from the interview data. Both the Chinese-Canadian ($M = 4.55$) and the Euro-Canadian ($M = 3.37$) cultural groups in general showed a central tendency to agree with the statement “The ultimate goal of wearing hearing aids is to restore one’s hearing to normal.” However, the Chinese group appeared to agree with this statement much more strongly than the Western group, and the mean difference was statistically significant ($p = 0.000$). On the other hand, item #37 on the questionnaire was only
completed by those participants who reported a hearing loss, and the mean difference between the two cultural groups was not statistically significant \( (p = 0.078) \).

**Item #33: The Smaller the Hearing Aids, the More Appealing?**

Four of the eight Chinese interviewees indicated that they would prefer smaller hearing aids if they had to wear amplification, two out of the eight said that cosmetics would not be an issue for them if they could not even hear what other people were talking about, and the last two Chinese participants did not make any relevant comments in response to this question. The four who preferred smaller aids reasoned that it definitely would be an advantage if people could not detect your hearing impairment “at first sight,” but most of them expressed some reservations about hearing aids being too small as well. For instance, C20 said cautiously, “I think smaller things usually mean that they are more expensive, but if prices are not that different, then definitely the smaller the better. But I’d still be concerned about the maximal output power and frequency of those tiny hearing aids.”

Interestingly, only two of the seven Western interviewees believe that smaller aids are definitely more appealing to them than the bigger ones. While W2 thinks it is mainly because of cosmetic reasons, W1 (who is the husband of W2) thinks there are more advantages to the smaller hearing aids than just being discreet. W1 said, “Yeah, well, you know, partly that’s just convenience, something that’s small would fit in your ear or behind your ear, wherever it is supposed to go; something that’s big and cumbersome takes a little bit more getting used to it.” The other five Western participants think that people at their age would not really mind the size of the hearing aids if one really needs them, and their responses are exemplified by W14’s comment: “I don’t mind too much –
they aren’t very big anyways, and they are usually covered by hair. Because I’m old, I think about other more important things, especially after my husband died.”

**Items #14 and #36: Stigmatization Associated With Hearing Impairment**

All of the seven Chinese respondents who answered this question think that it is wrong to treat hearing-impaired people with prejudice and emphasized the importance of treating them with much love and patience because they are already suffering from their hearing disability. However, four of the seven interviewees did admit that there are still a few people in the general society that would associate hearing loss with cognitive decline, and two of those four speculated that the reason many people ignore hard-of-hearing patients is probably not discrimination, but perhaps rather an effort to avoid a potentially embarrassing and exhausting situation. C2 was quite direct about her point of view: “If I see any hearing-impaired people, I would not talk to them much, because I don’t want to burden them more. Also, if I have to yell in order for them to hear, then other bystanders would recognize their hearing loss, and it would be a very embarrassing situation.”

The answers given by the seven Western respondents are even more unified than the Chinese group. None of them thinks that anyone would consider people with hearing impairment or hearing aids as less capable or slower in cognitive functions. For example, W10 said, “Ah, not unless you pretend you hear and you don’t, and you don’t know what you’re talking about, because I know people who don’t hear what’s going on, and, and they’ll talk about other things to the speaker . . . And I can’t stand not knowing what’s going on, because I don’t mind asking people.” W22 also said, “No, no, hearing, the quality of hearing is, is your own, um, choice, and, it has nothing to do with your ability. So it shouldn’t matter.”
SUMMARY: THE INTERVIEW VERSUS THE QUESTIONNAIRE

This chapter presented the summaries of responses from the interview portion of the present study as they relate to a subset of items on the questionnaire. During the course of the analysis process, it became clear that the data obtained from the interview sessions not only supplemented those obtained from the questionnaire forms, but the interview data also helped in the interpretation of some of the quantitative results discussed in Chapter Three, for three main reasons:

1) Even though the setup of the interview did not allow the participants to elaborate on everything they had responded to on the questionnaire, for the selected subset of items/topics, most interviewees were able to explain eloquently the reasons behind choosing a certain rating for a certain statement about hearing impairment. The interviewees’ responses provided the investigator with a deeper understanding of how each participant’s cultural background contributes to his/her beliefs and attitudes concerning aspects of hearing impairment. This advantage naturally leads to the next point.

2) The interview results revealed that sometimes a mean rating difference determined for a particular questionnaire item could at least be partially attributed to the different ways in which the Chinese and Western cultures come to define a key concept contained in that item. This phenomenon was most vividly illustrated when both the Chinese and Western interviewees were trying to decide whether hearing loss counts as a “health problem” and the meaning of “help” when assessing the relative importance of family members and hearing care professionals as described in the summaries above. Please see Chapter Five for more discussion on this point.
3) In general, the interview answers tended to show more divergence between the two cultures than the questionnaire responses. The Chinese and Western interviewees gave different patterns of response to many questions whose corresponding items did not yield significant mean rating differences through statistical methods. While this is a logical consequence of the fact that the sample size of the interview was much smaller than that of the questionnaire, this observation suggests that these seemingly nonsignificant items/topics might still contain a hidden group difference between the two cultures and deserve to be repeated in larger-scale future studies.

It is equally important to note that for many survey items, the interview data revealed as many differences in interviewees’ responses within a cultural group as between the two cultures. For instance, while most of the Chinese interviewees do not think that people with hearing impairment are willing to share the truth about their hearing difficulties with any non-family members, three of the Western interviewees essentially agreed with the Chinese group, another three think that it depends on the situation, and one interviewee from the Western group believes that people would feel free to discuss their hearing loss with people outside their family. Concerning the topic of alternative treatments (e.g., acupuncture, massage therapy, or herbal medicines) for hearing loss, the majority of the Western interviewees would not try these therapeutic methods at all if they had a hearing loss; half of the Chinese interviewees would try these alternative therapies first should they develop a hearing loss, but the other half indicated that they would prefer to see a Western medical doctor first. The existence of these within-group differences in the interview results serves as a good reminder that it is not uncommon for people from similar cultural backgrounds to have different opinions about the same issue, since besides cultural influences, very often a person’s attitudes and
beliefs are also shaped by other factors such as religion, family values, education, socioeconomic status, and experience.
Chapter Five
Discussion

REVIEW OF THE RESEARCH QUESTIONS

The purpose of the present study was to provide exploratory data and analyses to address the following questions in order to help inform best practices in audiology and generate hypotheses for future research:

1) What kinds of attitudes and beliefs do elderly Chinese-Canadians have regarding various aspects of hearing impairment (e.g., causes of hearing loss, stigmatization of hearing loss, impact of hearing loss on quality of life, etc.), and how do these attitudes and beliefs compare to those of elderly Euro-Canadians?

2) What kinds of attitudes and beliefs do elderly Chinese-Canadians have regarding various strategies for coping with hearing impairment (e.g., the price of hearing aids, the best method of using hearing aids, assistance from family members, alternative Chinese therapies, etc.), and how do these attitudes and beliefs compare to those of elderly Euro-Canadians?

3) What are the proportions of elderly Chinese- and Euro-Canadian participants in the present study who reported having a hearing loss, knew who audiologists are, and/or had previous experience with hearing aids? What do these proportions imply when interpreted in light of each culture's attitudes towards hearing loss?

4) What are the answers to questions #1 and #2 above if one only compares the responses given by those elderly participants across the two cultural groups who
The present cross-cultural survey study involved 30 elderly Chinese-Canadian and 30 elderly Euro-Canadian participants. The methods involved two stages of data collection: First, all of the participants filled out a questionnaire asking them to rate their level of agreement to a variety of statements concerning aspects of hearing impairment and related coping strategies; second, a subgroup of participants also attended a follow-up one-on-one interview session with the investigator, where each interviewee was given an opportunity to express the rationales behind choosing a certain level of agreement for a selected subset of items in the questionnaire. Results from the questionnaire data revealed that there were significant / marginally significant mean rating differences between the Chinese and the Western cultural groups for six of the 21 items, whereas marginally significant differences between the Chinese and the Western subgroups who reported hearing loss were found for two of the 28 items. Results from the compilation of interview data generally supported those obtained from the questionnaire data; however, the interview results also revealed more divergence in the patterns of response between and within the two cultures where statistical tests failed to find a significant difference. The results also showed that sometimes the Chinese and Western interviewees presented markedly different conceptualizations of several key words used in the questionnaire. The details of these results as well as their interpretations and implications are systematically discussed in the remainder of this chapter.

The current chapter begins with a discussion of how the results of this study, both quantitative and qualitative, relate to each of the four research questions stated above. Then, it addresses the potential ways the findings of the present study can be applied clinically, that is, their practical significance in terms of the interaction between hearing
care professionals and elderly Chinese clients. Finally, the chapter ends with a discussion of how future studies in related areas can build on the methods and results of this study to expand our knowledge regarding attitudes towards hearing impairment and their impact on help-seeking behaviours in diverse cultural settings. Specific suggestions for future exploration are proposed throughout the discussion of the results of the present study.

**REPORTED HEARING LOSS, AUDIOLOGISTS, AND HEARING AIDS**

**Perceiving Hearing Impairment (#29)**

Twenty percent of the total Chinese-Canadian participants answered “Yes” to item #29 “Do you have a hearing loss?,” whereas 60% of the Euro-Canadian participants answered “Yes” to the same question (recall that both cultural groups had 30 participants in the present study). There appeared to be three times as many Western participants as Chinese participants admitting to suffering from a certain degree of hearing impairment. Since the age and gender characteristics were somewhat similar across the two cultural groups, it is logical to infer that, on the surface, Western seniors are much more likely than Chinese seniors to “confess” to having a hearing loss. As mentioned in Chapter One, one of the results of the study conducted by Wu et al. (2004) was that a simple question “Do you think you have a hearing problem?” alone in their screening questionnaire had a very high specificity (i.e., low false-positive rate) in identifying the presence of hearing loss for a group of elderly participants from Singapore. However, the current study was not intended to be a rigorously controlled epidemiological research project, nor did it obtain objective measurements of each participant’s hearing level, which could be used to compare and contrast the proportion of individuals who “self-reported” a hearing loss on the questionnaire. Therefore, although the present study did not offer evidence for the
speculation of whether the Western elderly participants do in fact report their own hearing abilities more “accurately” (as defined by objective measures) than their Chinese counterparts, this is undoubtedly an interesting topic for future research to explore.

As discussed in Chapter One, researchers such as Doyle and Wong (1996) and Doyle et al. (2002) suggested that a number of factors could interact to result in the phenomenon that Chinese elderly individuals in general might be less aware of how small changes to hearing capacity could affect daily communication patterns. These factors include: culture (such as hearing loss considered as a mark of advanced age and being able to pass the responsibility for successful communication to family members), environment (since relatively loud speech and high ambient noise in metropolitan areas such as Shanghai and Taipei have been accepted by many modern Chinese people as a normal way of life), and language (such as an abundance of low-frequency tonal changes and a lack of unstressed high-frequency grammatical morphemes in the Chinese languages). The transcribed interview data also hinted at several possibilities as to why Chinese elderly persons may be prone to underreport their hearing difficulties. One of these possibilities is that some Chinese seniors may be reluctant to disclose their own physical weaknesses and disabilities to others in fear of losing “face” (i.e., self-esteem). An elderly Chinese couple consented to be interviewed by the investigator individually. While the husband claimed that at his age, his hearing remains excellent (e.g., the ticking sound of his alarm clock is still audible to him), his wife confided that she thinks her husband’s hearing has gone down significantly over the years, especially in the left ear. The wife later added that she believes most Chinese males are too stubborn to reveal their own diseases, and that when she comes to think about it, “this Chinese culture is quite scary in this respect.” The second possibility is that, due to a lack of knowledge, the term “hearing loss” (in its
Chinese equivalent) might even be somewhat confusing for many Chinese elderly persons. For example, an elderly Chinese woman told the investigator, “I can still hear, but can no longer understand or memorize many things, but… it could also be an IQ problem, so even though I marked “Yes” [on item #29], I don’t think I have a real hearing loss.” Another elderly Chinese gentleman, who used to be a senior researcher at a national research agency in China, apologized at the beginning of the interview: “Excuse me, but what do you mean exactly by “hearing impairment”? . . . Oh, I see, it means the loss of hearing, I get it now.” Finally, as mentioned above, several linguistic characteristics of the Chinese languages could make speech perception in one’s mother tongue much easier for a hard-of-hearing Chinese-Canadian participant than for a Euro-Canadian participant with a nearly identical hearing loss (see, e.g., Doyle et al., 2002). Although this point was not mentioned explicitly in the contents of the responses obtained from the interview, the behaviours of some of the Chinese interviewees hinted at the existence of this phenomenon. For instance, even though C1 and C5 both admitted that their hearing “had gone down significantly over the years,” each one of them was successful in carrying out a half-an-hour conversation with the investigator over the phone with very few instances of asking for repetition, and not surprisingly neither of them had ever sought treatment for their hearing problems before the interview.

Drawing from all of the reasons discussed above, if hearing impairment was not a relevant personal concern for the majority of Chinese participants, when they were asked to respond to the statements in the questionnaire, the Chinese participants might be more prone to think in terms of “how others would react if they had a hearing loss” instead of “how I would react if I had a hearing loss.” This possibility would certainly influence the way the questionnaire was completed by some of the Chinese respondents and should be
taken into consideration when interpreting the results of the current study. Future studies should continue to investigate the factors causing Chinese seniors to potentially underreport their hearing problems as well as how this indifference to their own presbycusis influences the Chinese seniors’ views and behaviours concerning hearing impairment in general.

Who Are Audiologists? (#30)

In answer to “Do you know what audiologists do?” (item #30), only a third of the total Chinese-Canadian participants and two thirds of the total Euro-Canadian participants indicated that they were certain about who audiologists are. There were twice as many Western participants as Chinese participants possessing a rough idea about what kind of service this particular health care profession provides. In fact, all seven Chinese interviewees mentioned that they had never heard the term “audiology” prior to their participation in the current study, and the majority of them think that hearing impairment would be best treated by an otolaryngologist (ENT). On the other hand, all seven Western interviewees indicated that they are quite familiar with the role of audiologists in the health care system, by both direct means (personal visits to audiology clinics and use of hearing aids) as well as incidental means (acquiring information through casual conversations with hard-of-hearing friends and relatives). It is obvious from the interview data that none of the seven Chinese interviewees (regardless of their self-reported hearing status) had much personal experience with any hearing care providers or many opportunities to discuss the topic of hearing loss with friends or relatives whom they socialize with regularly. This in turn contributes to this seemingly widespread lack of general knowledge about hearing impairment and the various treatment options available
for it among the Chinese elderly population. Potential reasons behind this crucial point are explored in detail as the discussions on the Chinese’ attitudes towards hearing loss unfold in the following sections.

Prior Experience with Aural Amplification (#31)

The contrast between the Chinese and Western cultures in the proportions of participants who had previous experience with hearing aids is much greater than for the two preceding items. According to results tallied from item #31, every one of the 30 Chinese participants indicated “No” for the question “Have you ever worn a hearing aid?,” whereas nine of the 30 Western participants (30%) indicated “Yes.” When asked about where one can go to buy a hearing aid, none of the Chinese interviewees could name a specific location in North America where one could purchase a hearing aid, and most of them mentioned that they would just follow their family physicians’ recommendations when the day comes for their hearing loss to become severe enough to warrant the use of amplification. In contrast, most of the Western interviewees believed that clinicians who have the skill to do accurate hearing tests should be the ones who dispense and fit hearing aids, which was no surprise, since three of the Western interviewees are actually veteran hearing aid users.

Looking closely at the numbers, a total of six Chinese participants reported having a hearing loss; but none of them had worn a hearing aid before. For the Western group, 18 of the participants reported having a hearing loss, and exactly half of those participants had worn a hearing aid before. This dramatic difference in numbers between the two cultures once again reflects the hypothesis that Chinese elderly persons in general are relatively less aware of, less concerned with, and/or less informed about hearing loss and
its associated coping strategies compared to their Western counterparts. This speculation will also become a recurring explanation behind several other differences in attitudes and beliefs discussed throughout this chapter. Another possible reason why none of the Chinese participants had any experience with hearing aids is that most of them came from places such as Mainland China and Taiwan, where access to licensed hearing aid clinics is very limited and the profession of audiology was completely unheard of until the last few years, and demographic data collected from the questionnaire indicated that over half of the Chinese participants had only been living in Canada for five years or less. Finally, when asked to comment on the costs of hearing aids, most of the Chinese interviewees expressed the view that even a price of $700 CAD (for a low-end model) would still make a hearing aid appear rather expensive and unattractive for them. On the other hand, the group of Western interviewees did not think that hearing aids are cheap, but on the premise that if a hearing aid could really improve the quality of life of its wearer, then a price tag of around $1500 CAD per aid would be reasonable. This concern about high costs and the lack of information about the real benefits of amplification in the first place can act synergistically and ultimately deter an elderly Chinese person’s willingness to try hearing aids, even when he/she has already admitted having some hearing problem.

Summary

Descriptive results of the questionnaire data showed that in the current study, three times as many Western participants as Chinese participants reported having a hearing loss, twice as many Western participants as Chinese participants had previously heard about the profession of audiology, and whereas 30% of the Western participants indicated they had worn hearing aids before, none of the Chinese participants had had any previous
experience with aural amplification. Assuming that the proportion of participants who actually had an objectively measurable hearing impairment was roughly the same in each of the two cultural groups, there are three potential reasons that can explain the observations mentioned above: 1) Aspects of the Chinese culture and phonological characteristics of the Chinese languages mean that the daily lives of the Chinese seniors are less affected by a mild hearing loss; 2) hearing impairment and related coping strategies are not common / popular conversational topics during a social gathering of Chinese elderly people due to a number of cultural and environmental factors; and 3) as a consequence of the above two reasons, the general Chinese elderly population appears to be less aware of and/or less knowledgeable about hearing loss and its various treatment options compared to the general Western elderly population.

**GENERAL ATTITUDES AND BELIEFS ABOUT HEARING LOSS**

Concerning the first section (items #8 to #18) of the questionnaire, which dealt with general attitudes towards hearing impairment, only items #9 and #15 showed marginally significant differences in mean ratings between the Chinese- and Euro-Canadian groups. As mentioned in Chapter Three, these results were only “marginal,” because while the p-values of questionnaire items #9 (past occupations and hearing loss) and #15 (the aging process and hearing loss) failed to achieve significance using Holm’s Method, they would have been significant if a more liberal $\alpha$ (0.05) was chosen as the criterion. Since the results of these two comparisons were only marginally significant, one has to be cautious when making inferences or drawing conclusions from them. Future research with greater participant numbers is needed to ascertain the extent of cultural differences (if any) for these two items between Chinese and Western people.
Past Occupations and Hearing Impairment (#9)

The Chinese scored a mean rating of 3.8 on the Likert scale for item #9, whereas the Western group scored a mean rating of 4.4, and statistical tests revealed that the difference between these two mean ratings was marginally significant ($p$-value smaller than 0.05 but did not achieve significance by Holm's Method). Putting this result in the context of the original statement, it would mean that the Western elderly participants agreed more strongly than the Chinese elderly participants that the kinds of jobs people have throughout their lifetime influence the development of hearing loss in old age. Note that, while the Chinese produced the lesser of the two ratings, their mean rating was still positive for this item, and this is in agreement with what Holroyd (2002) observed about the elderly population living in Hong Kong: “How each individual distinguished between symptoms associated with disease and symptoms accompanying the natural process of aging depended on particular life histories and environments” (p. 740).

On the other hand, when turning to the interview data relevant to item #9, it seems that almost every Chinese and Western interviewee agreed that past occupations do have a bearing on hearing abilities when one gets old. Interestingly, while the level of agreement to this concept of “occupational noises damage hearing” was somewhat uniform, the examples of noise hazard given by the interviewees were different between the two cultures. Most of the Western participants mentioned loud noise associated with heavy machinery, which was no surprise, since most of them also indicated that either they themselves or their significant others had had past experience working in noisy factories such as pulp mills or carpentry shops. In contrast, four of the seven Chinese interviewees provided examples describing how sudden acoustic trauma could instantly
alter the hearing ability of a soldier in the military. This is consistent with the fact that many of the Chinese participants had first-hand experience with several large-scale military conflicts (mainly the Japanese invasion of China during the Second World War and the Nationalist-Communist Chinese Civil War) during their adolescent years. Could it be that, since in the minds of many Chinese seniors, the idea of past occupational influences on hearing is as instant as a landmine explosion, and since the statement associated with item #9 suggests a more gradual impact on hearing from past careers, the Chinese elderly participants on average would opt to choose a rating that expresses both agreement with and reservation about this statement? Future studies with questions designed to test this hypothesis would be revealing.

**Getting Old Equals Hearing Loss? (#15)**

The Chinese scored a mean rating of 4.1 on the Likert scale for item #15, whereas the Western group scored a mean rating of 3.2, and statistical tests revealed that the difference between these two mean ratings was marginally significant (p-value smaller than 0.05 but did not achieve significance by Holm’s Method). Putting this result in the context of the original statement, it would mean that the Chinese elderly participants agreed more strongly than the Western elderly participants that hearing loss is a natural part of getting old. This result is consistent with the observations from several past studies discussed in Chapter One that traditionally, Chinese people consider that having symptoms of physical and cognitive declines in old age is part of the normal aging process (see, e.g., Doyle & Wong, 1996; Lau et al., 2004). On the other hand, past research suggested that not every Westerner readily associates hearing loss or the presence of amplification with aging (see, e.g., Cienkowski & Pimentel, 2001). This
difference in attitude may be due to the fact that traditional Chinese medicine takes a holistic approach to explaining the relationship between a particular disease and the body as a whole, so as the entire body ages, the individual components that make up the body should naturally experience a decline in functional capacity as well. Moreover, while the Chinese culture, heavily influenced by philosophical teachings such as those of Confucius, tends to show respect explicitly for the elderly population, individualistic Western societies tend to consider everything youthful as positive but everything elderly as negative (Valla & Sweetow, 2000). Therefore, perhaps in order to preserve the self-esteem of a hard-of-hearing individual, Westerners are relatively more motivated to consider hearing impairment and aging as two separate matters, whereas a Chinese person may not be bothered if other people take his/her hearing difficulties as a sign of growing old. Again, future, larger-scale studies would be able to ascertain the validity and generalizability of the marginally significant attitudinal difference found for item #15.

**Is Hearing Loss a Health Problem? (#12)**

Statistical analysis comparing the mean ratings to item #12 “Hearing loss is a health problem” between the Chinese and Western cultural groups (3.8 and 3.3, respectively) failed to reveal any significant difference. However, the verbal responses given by the interviewees regarding this topic were not as uniform across the two cultures. Five of the seven Chinese respondents think that hearing loss is indeed a form or a result of bodily ailments, and the only two Chinese respondents who disagreed with the rest of the group think that because hearing loss is a natural part of being old, it is really not a “health problem” (see the section on hearing loss and aging above). Conversely, only three of the seven Western interviewees considered hearing impairment as a health problem, while the
rest either disagreed with the statement completely or believed that hearing loss is more of a “communication problem” than a physical disorder. Overall, there appeared to be several different interpretations of what was meant by the term “health problem” among the interviewees; while most of the Chinese interviewees seemed to use the term to mean common adverse conditions of the body such as injuries from a car accident or fever from a flu, some of the Western interviewees equated “health problem” with “communication problem,” some believe that the term denotes everything that is not an “age problem,” and still others reserved the term to mean life-threatening diseases such as cancer or stroke. The observed disparity in the perceived definitions of “health problem” even by participants from the same cultural background should be an interesting topic of investigation for future cross-cultural studies looking at attitudes towards hearing loss. Careful wording and more than one item would be needed to tease these factors apart.

The interview data’s divergence in response patterns between the two cultures may be partially due to the fact that, compared to the Western world, verbal communication is never a priority for the traditional Chinese culture because relationships in this culture are predominantly maintained by nonverbal means such as providing tangible assistance or reciprocating favours. Therefore, the idea of reduced auditory sensitivity being a “communication difficulty,” which has a strong connotation of adversely affecting interpersonal relationships, might sound strange to many Chinese elderly individuals. Nevertheless, the difference in response patterns observed in the interview data should not be taken as a sign that the numerical data obtained from the questionnaire were inaccurate; after all, the two methodologies were conducted using sample sizes that were importantly different (15 for the interview and 60 for the questionnaire). Future research with larger sample sizes should consider investigating how the traditional social beliefs
and practices of the Chinese people influence their attitudes towards the nature of hearing loss.

**Past Diet Patterns and Hearing Impairment (#13)**

Given our knowledge that Chinese people not only tend to attribute many health disorders to excessive intake of "hot," "cold," or "poisonous" foods (see, e.g., Lai & Yue, 1990), but also consider changes to dietary habits as an important form of therapy regimen, it is quite surprising that mean ratings for item #13 "The kinds of food people eat throughout their lifetime influence the development of hearing loss in old age" indicated no significant difference between the two cultural groups, not to mention that both groups tended to disagree with this statement. In terms of the interview data obtained for this topic, none of the Western interviewees thought that there is any relationship between the history of food consumption and hearing loss, and only two of the eight Chinese interviewees believed that certain "hot" foods can disrupt the equilibrium status of the body and subsequently affect the functions of the ears. While one of these two Chinese interviewees had resided in Canada for over 12 years, the other one had been in Canada for less than six months, and both of them belong in the same age group as other Chinese participants. Therefore, length of residence in Canada and age were not likely to be the reasons behind the two interviewees' dissenting opinions. The rest of the Chinese interviewees told the interviewer that they have never heard that any food would have anything to do with hearing. The apparent agreement on this topic of food and hearing loss between the two cultures could potentially mean that most of the Chinese participants had adopted a Western biomedical view towards health and diseases, but in light of their non-Western answers to many of the other interview questions, this
interpretation is unlikely. Perhaps the health belief model derived from the traditional Chinese medicine does not usually specify “food” as a source of hearing loss? Or, it could be that the pattern of the Chinese participants’ attitude towards food and hearing loss is a reflection of an apparent lack of knowledge and awareness about hearing and hearing loss among the elderly Chinese populations, a point discussed previously in this chapter. These are certainly interesting hypotheses for future studies to investigate.

Summary

In the present study, the Western participants on average agreed more strongly than the Chinese participants that people’s past careers influence the development of their hearing loss in old age. Moreover, the interview results revealed that the interviewees from the two cultures had significantly different ways of describing how hazardous occupations could damage one’s hearing. On the other hand, the Chinese participants on average agreed more strongly than the Western participants that hearing loss is a natural part of the aging process. Traditional Chinese medical beliefs and the culture’s intrinsic respect for the elderly population may account for this difference. Although statistical analysis did not find any significant mean rating difference for the item concerning whether hearing loss is a health problem between the two cultures, the interview results revealed that the interviewees, even those from the same cultural background, had several distinct interpretations of what is meant by the term “health problem.” While it is well known that the Chinese culture traditionally links a great number of health conditions with one’s food choices, statistical analysis did not find any significant mean rating difference for the item concerning whether past diet patterns affect the development of hearing loss in old age (i.e., both the Chinese and Western participants on average...
disagreed with the idea that one's lifelong eating habits are a major factor determining whether the person acquires hearing loss at an old age).

GENERAL ATTITUDES AND BELIEFS ABOUT COPING STRATEGIES

For the second major section of the questionnaire (items #19 to #28), which dealt with attitudes towards coping with hearing difficulties (e.g., consulting a health care professional, changing lifestyle habits, the price and size ranges of a hearing aid, the right way to use a hearing aid, etc.), statistical analyses showed that significant differences exist for the mean ratings to items #21, #24, #27, and #28 between the Chinese and Western participants. These results mean that, on average, the Chinese 1) were more likely than the Westerners to agree that wearing hearing aids prevents further deterioration in hearing (#21), 2) agreed more strongly than the Westerners that the ultimate goal of wearing hearing aids is to restore one's hearing to normal (#24), 3) were more likely than the Westerners to agree that it is best not to wear hearing aids all day long (#27), and 4) were more likely to think that family members are better able than rehabilitation clinicians to help a person with hearing loss, and vice versa for the Westerners (#28).

Perceived Benefits of Aural Amplification (#21 and #24)

The results suggested that the Chinese participants on average were more likely to believe that somehow wearing hearing aids can prevent further deterioration in hearing, a notion that most people with knowledge about the ears or any experience with hearing aids would find strange. Interestingly, findings by researchers such as Lau et al. (2004) suggested that some Chinese people also believed that wearing corrective lenses could
prevent vision loss. It is important to note that the Chinese group did not strongly agree with the statement of item #21, because the mean rating was only 3.3. This might be yet another reflection of the lack of general knowledge and/or uncertainty about hearing loss and hearing aids among Chinese seniors mentioned in the sections dealing with perceived hearing loss, knowledge about audiologists, and prior experience with hearing aids above. Possible explanations for why Chinese seniors seemed to lack basic knowledge in this area of life include the following: 1) The practice of audiology and hearing aid dispensing have become gradually recognized by the general public only in recent years in Chinese-dominant places such as China, Hong Kong, and Taiwan; 2) as discussed in Chapter One, the Chinese traditionally refrain from talking about their own physical weaknesses to “outsiders” in fear of losing face (Gao, 1996); and 3) as mentioned above, verbal communication, and therefore speech and hearing abilities, traditionally have not been the most important element in building successful interpersonal relationships in the Chinese culture. Combining points 2 and 3 above, it is not hard to imagine that hearing loss would not be a popular conversational topic at a gathering place for a group of Chinese seniors, let alone a subject about which to exchange information on hearing aids and other coping strategies.

Regarding item #24, the Chinese participants agreed more strongly than the Western participants that wearing hearing aids can help restore one’s normal hearing. Interview data obtained for this item indicated that none of the Chinese or Western interviewees think that simply wearing hearing aids can actually “cure” one’s hearing disability, and all of them believe that while hearing aids are imperfect devices, they are still useful in helping a hearing-impaired person hear much better. It is important to recall that while three of the seven Western interviewees were long-time hearing aid users, none of the
eight Chinese interviewees had ever worn a hearing aid. In fact, none of the 30 Chinese participants in the present study had any prior experience with hearing aids, which is an interesting observation that has been discussed in detail earlier in the chapter. Therefore, since a significant portion of the Western participants (nine of 30) had previous experience with hearing aids, they were more likely to be more realistic about the benefits of aural amplification than the Chinese group (i.e., knowing first-hand the advantages and disadvantages of wearing hearing aids). This might explain why there was a discrepancy in mean ratings for this item between the two groups of elderly participants.

The Way of Moderation (#27)

The comparison result from item #27 suggested that the Chinese participants were more likely than their Western counterparts to agree that it would be better not to wear hearing aids all day long because allowing the ears some chances to “rest” throughout the day is a good way to preserve one’s remaining hearing. This notion of wearing hearing aids intermittently might sound foreign or even illogical to many Westerners (since most audiologists recommend wearing hearing aids for only a brief time at first and gradually increase the length of time each day to facilitate the auditory system to accommodate to the amplified sound – the goal is for the client to eventually be able to wear the aids during most of his/her waking hours), but it reflects the essence of philosophical and medical teachings passed down from Chinese ancestors for thousands of years. The traditional Chinese medical model stresses the importance of aligning our bodies with the energies in the universe, an abstract concept embodied in terminologies such as “balance,” “harmony,” and “equilibrium” (see, e.g., Holroyd, 2002). As part of the concept, any extreme means of maintaining or restoring health are all inadvertently
harmful, and hence “the way of moderation” (i.e., being moderate about everything) is preferred. This ideology also applies to health care beliefs, where the Chinese often avoid any treatment regimes that they deem to be “excessive” (Lai & Yue, 1990, pp. 83-84). Anecdotally, the investigator in the present study vividly remembers that the first pair of glasses he got as a young child was accompanied by a repeated message from an optician in Taiwan: “Don’t wear your glasses all day long – give your eyes a chance to see things naturally so that your eyesight won’t deteriorate quickly.” Perhaps this deep-rooted belief as well as the pervasive lack of knowledge about aural amplification among the Chinese elderly population led many of the Chinese participants to think that wearing hearing aids all day was a bad idea. This is definitely an interesting aspect in the Chinese culture’s attitudes towards health worthy of much future research endeavour.

Family Members vs. Professional Clinicians (#28)

Item #28 posed a question to every survey respondent: Which of the following do you think can help a person with hearing loss more – family members or rehabilitation clinicians? Statistical analysis indicated that the patterns of responses to this item between the two cultures were indeed different, with the Chinese being more likely to think family members would be more helpful and vice versa for the Westerners. The transcribed data from the interview sessions also showed the same trend. While all of the seven Western interviewees believe that trained health care professionals can provide more practical help for their hard-of-hearing clients, more than half (four out of seven) of the Chinese interviewees think that because family members are the ones who actually interact with the hearing-impaired individuals on a daily basis, they understand the real needs of these individuals and, hence, can provide more meaningful assistance. Both groups offered
plausible and compelling reasons to support their opinions on this topic. A difference that emerged was that while the Chinese group took the more general meaning of the word “help” (i.e., to make life easier for the individual with hearing loss), the Western group tended to define the word “help” to mean “providing professional services for the individual in need.” Some of the Western interviewees also supplied the following rationale to support their claims: Although family members are undoubtedly invaluable in providing emotional support and accommodate the needs of the hearing-impaired person, they lack the professional expertise and equipment to really help improve the person’s hearing abilities.

There are at least four possible reasons why the two cultural groups exhibited contrasting views regarding the roles of family members and professional clinicians: 1) The two cultures’ different interpretations of the term “help” as revealed by the interview data; 2) as discussed extensively in Chapter One, Chinese seniors not only tend to spend more time at home than their Western counterparts, Chinese cultural values dictate that family members should assume the primary responsibility for taking care of their sick at home (see, e.g., Daly et al., 2002; Wu et al., 2004); 3) as mentioned previously, Chinese seniors tend to be less aware and less informed about hearing loss and its various solutions, so naturally they would not expect too much from any hearing care clinicians if they did not fully understand how those clinicians could help a person with hearing loss; and 4) researchers such as Anderson and Chung (1982) suggested that while a Western family’s goal for a handicapped person is to help him/her attain a normal life, a Chinese family’s goal in the same situation is to help him/her live out a happy life: These fundamentally distinct attitudes towards life outlook may be reflected in the differential preferences for family members or trained professionals between the two cultures.
Improvement from Diet AND Lifestyle Changes? (#22)

Item #22 on the questionnaire was: “Changing diet patterns and lifestyle habits may help alleviate hearing loss.” Although initial statistical analysis failed to find any significant difference in mean ratings comparing the two cultural groups, additional data from the interviews suggested that the survey data obtained for this item might be confounded, because the wording of the statement was not clear. Most of the interview participants, regardless of their cultural background, treated “diet patterns” and “lifestyle habits” as two separate matters relating to hearing impairment and gave their verbal answers accordingly. This suggests that the original statement of item #22 might have been confusing to many participants as they attempted to mark the level of agreement to the statement “as a whole,” because there were actually two questions in a single item. The discovery of this potential confound also highlights the value of having qualitative transcriptions alongside the numerical data from the questionnaire during the analysis process, since the interview data frequently elucidated the assumptions with which each item on the questionnaire was answered by the participants. Nevertheless, it was still found that the two Chinese interviewees who believe in a relationship between past diet patterns and hearing loss in old age also think that changing eating habits can help alleviate one’s hearing problem. Future studies could investigate diet and lifestyle changes separately in order to find out whether or not there are significant differences in attitudes and beliefs between the Chinese and the Western cultures.
Summary

The results of the current study indicated that the Chinese participants on average were more likely than their Western counterparts to believe wearing hearing aids can prevent further deterioration in hearing and that the Chinese participants also agreed more strongly than the Western participants that wearing hearing aids can help restore one's hearing to normal. The fact that the Chinese participants appeared to be much less experienced with hearing aids than their Western counterparts might be a primary reason why the Chinese seniors tended to have more unrealistic expectations about the positive outcome of aural amplification. The results also showed that the Chinese participants were more likely than the Western participants to agree that not wearing hearing aids all day long would be a good way to preserve one's residual hearing, which is consistent with the Chinese culture's traditional emphasis on "balance" in health-related issues as expressed through the philosophy of "the way of moderation." Finally, while the questionnaire results indicated that the Chinese participants were more likely to think that family members are more helpful than health care professionals for a person with hearing loss and vice versa for the Western participants, the interview results revealed that in this case, the two cultures had drastically different understandings of the word "help." The centrality of the family structure and the notion of helping an individual with disabilities achieve "happiness" rather than a "normal life" are both plausible explanations for the observed difference in opinions between the two cultural groups.

PARTICIPANTS WITH SELF-REPORTED HEARING LOSS

Research questions #4 and #5 dealt with cross-cultural comparison results that focused solely on those participants who answered "Yes" to the question "Do you have a
hearing loss?.” This subgroup of participants was asked to fill out the same questionnaire items as the rest of the participants plus a special section (items #32 to #38) of the survey form (as discussed in Chapter Two), which contained statements about past attitudes, behaviours, and experience concerning a variety of practical coping methods for hearing impairment. Statistical test results indicated that out of a total of 28 questionnaire items only items #27 and #17 had “marginally” significant differences in mean ratings (i.e., their p-values are significant when \( \alpha \) was set at 0.05 but not when adjusted \( \alpha \) levels were used according to Holm’s Method) between the six Chinese-Canadian participants who reported a hearing loss (C-HL) and the 18 Euro-Canadian participants who reported a hearing loss (W-HL). Putting these results in the context of their original statements, it appeared that while the C-HL were much more likely than the W-HL to think that it would be best not to wear hearing aids all day long, the C-HL tended to disagree more strongly than the W-HL that people with family members who have hearing loss are more likely to develop hearing loss. The first finding about the preferred duration of hearing aid usage was no surprise, since the same item also showed the same attitudinal difference when comparing the two cultural groups as a whole. One would not expect the fact that these C-HL admitted having a hearing loss to have much influence on their attitudes towards amplification; since none of them had any prior experience with hearing aids, their belief system in this area of life was most likely still shaped by traditional cultural teachings and hearsay from relatives and friends. However, the second finding about the C-HL attributing less genetic cause to hearing impairment than the W-HL was relatively less expected, not only because comparison results using data from all of the participants failed to find any significant difference for item #17, but also because earlier cross-cultural studies in other health care areas (see Chapter One) did not provide much
information concerning attitudes towards genetic causes of certain health conditions as a salient factor distinguishing the Chinese and the Western cultures.

In the end, since the statistical results pertaining to the last two research questions were only marginally significant, no strong claims about these findings can be made at this moment. It is also obvious that the quantitative analysis outcomes obtained for the subgroups who reported a hearing loss were only partially comparable to those obtained for the entire cultural groups, and it could be just due to the fact that the sample sizes used in the former set of comparisons (six Chinese-Canadians and 18 Euro-Canadians) were not only small but also extremely unbalanced in number. Future research interested in pursuing topics similar to the ones outlined in this section should definitely collect data from greater sample sizes as well as obtain both subjective and objective measurements of participants' hearing to find out whether differences in attitudes and beliefs in the hearing-impaired population are really dissimilar from those in the general population between the Chinese and the Western cultures.

**SUMMARY AND IMPLICATIONS FOR CLINICAL PRACTICE**

To summarize the findings of the current study into one sentence, it would be that there are clearly salient differences in the ways the Chinese- and Euro-Canadian elderly populations view the various topics related to hearing impairment. Compared to their Western counterparts, the Chinese seniors appeared to be less experienced with audiologists and hearing aids and less likely to think that there is a strong association between past occupations and hearing loss in old age, but more likely to think that hearing loss is a natural part of the aging process. Regarding attitudes towards treatments for hearing loss, the Chinese seniors were more likely than their Western counterparts to
think that hearing aids can prevent further deterioration in hearing, that the goal of
wearing hearing aids is to restore one's hearing to normal, that hearing aids should not be
worn all day long, and that family members can help a hard-of-hearing person better than
hearing rehabilitation professionals. For participants who reported themselves to have a
hearing loss, those from the Chinese group appeared to be more likely than those from
the Western group to think that hearing aids should not be worn all day but less likely to
believe that genetic predisposition is a major factor in the development of hearing
impairment.

With these differences in mind, there are steps hearing care professionals can take to
provide a more effective and culturally sensitive service to the increasing Chinese elderly
communities in Canada. First, there seems to be a lack of knowledge and/or awareness
about hearing loss and its treatment options among a majority of the Chinese elderly
population. This could be the primary reason why many hard-of-hearing Chinese seniors
are not getting the audiological services they need as opposed to a fear of being
stigmatized due to their hearing loss, since compared to Western seniors, Chinese seniors
in general are more likely to believe that hearing problems come naturally as a person
grows old. Therefore, it would be a good idea to carry out some kind of hearing loss
awareness campaign targeting the dense Chinese communities in metropolitan areas such
as Vancouver and Toronto (e.g., handing out Chinese-language brochures on hearing loss
at local community centres, placing an advertisement about who audiologists are on a
Chinese-language radio channel, etc.). It would also be a good practice to spend a little
more time in counselling sessions with Chinese clients who come in for a regular
audiological check-up or a hearing aid consultation, to explain some of the basic
information with which most Western clients would already be familiar before they enter
The results of this study also indicated that Chinese seniors may be prone to beliefs about aural amplification that sometimes contradict conventional Western wisdom, such as that wearing hearing aids can reverse the trend of hearing loss or that giving the ears a break from the aids throughout a day is a good way to preserve one’s residual hearing. It is imperative that audiologists and other hearing care clinicians show much respect for these opinions, which stem from the traditions of the Chinese culture and listen carefully to what the Chinese clients have to say in order to build a strong rapport before any “educational” sessions start. However, it is also the responsibility of the clinicians to make sure that their Chinese clients still receive the maximum benefit from wearing hearing aids. Therefore, it would be wise for clinicians to help their Chinese clients establish a realistic expectation when making decisions about hearing aids, and after the devices have been fitted, the clinicians would probably want to explain the instructions of using the aids in detail as well as the rationale behind them to help the Chinese clients recognize the value of following through with these recommendations. For example, it is important that hearing aid users understand how the brain accommodates to amplified hearing.

Finally, consistent with one of the core Chinese cultural values, the findings revealed that Chinese seniors are more likely to think that family members, as opposed to any health care professionals, are the ones who can really “help” a hearing-impaired person overcome the obstacles of his/her daily life. Again, educational campaigns on the roles of audiologists and other hearing care service providers in large Chinese communities should be helpful in raising the awareness about the many ways “outsider” assistance is available to a hard-of-hearing person in a Western country such as Canada. Moreover,
since strong support and cooperation from family members and close friends are indispensable components of a successful aural rehabilitation program (see, e.g., Dillon Edgett, 2002), the Chinese culture’s traditional emphasis on a family-centred care system and natural affinity with “insiders” (see, e.g., Gao, 1996) can be an asset when designing an effective treatment regime for hearing-impaired Chinese individuals. Therefore, it might be desirable for clinicians to invite a Chinese client’s family member(s) to sit in on a hearing evaluation or a hearing aid fitting session and courteously allow them to express any comments and concerns about the process whenever the opportunities come up. The clinicians could even suggest a few rehabilitational activities and modifications of behaviours that family members and close friends can readily do at home. In so doing, both the Chinese clients and the family members may be delighted to know that the family – as understood by the Chinese for thousands of years – is still taking an active role in helping the hearing-impaired person live out a better life. In this way, audiologists and other hearing care professionals would be able to deliver the most effective treatment programs while providing culturally sensitive services for their Chinese clients.

POSSIBILITIES FOR FUTURE STUDIES

Caveats to Interpreting the Results of the Current Study

There are several aspects of the present study that must be taken into consideration when making any generalizations of the results. The obvious points of caution include the relatively small sample size and the potential translation equivalence problems that could be a result of administering different language versions of the same questionnaire to different cultural groups. In Chapter Two, it was mentioned that some of the Chinese participants were recruited immediately after they had heard a presentation on topics
related to audiology and hearing aids. If it was true that most of the Chinese seniors were less aware of and/or less knowledgeable about hearing impairment and its treatment options, then a response bias was likely to occur for those Chinese participants recruited after the talk due to their recent direct exposure to relevant information before filling out the questionnaire. However, only questionnaire data collected from three of those Chinese participants were included in the final analysis procedures (the rest were excluded because the participants had lived in Canada for more than 20 years), and none of the seniors from this special group of Chinese participants participated in the follow-up interview. Therefore, even if a response bias did exist for these three Chinese participants, their responses on the questionnaire would not have had a major impact on the overall “big-picture” results of the present study.

Another potential source of confound emerged as the investigator analyzed the contents of the verbal responses obtained from the interview: As discussed previously in this chapter, even assuming the translation was optimal, the Chinese and the Western participants still ascribed interestingly different meanings to certain key terms such as “health problem” and “help” (as in “helping” a person with hearing loss). These culture-mediated differences in lexical definition might have influenced the ways in which the Chinese and Western participants responded to some of the statements in the questionnaire. Finally, similar to other cross-cultural studies, the goal of the current study was to capture the *macro-cultural* attitudes towards hearing impairment and aural rehabilitation, so the findings should never be applied as stereotypes describing any individual (elderly or not) from either the Chinese or the Western cultural background.
Similarities between the Two Cultures

So far the discussion has concerned the attitudinal differences between the Chinese and Western participants, but a quick review of the statistical results shows that there were many more items on the questionnaire that did not yield a significant between-culture mean rating difference than those that did. While it is certainly possible that Chinese and Western seniors share more similarities than differences in their attitudes and beliefs regarding hearing loss and related coping strategies, a survey item concerning social stigmatization of hearing loss, for example, that yielded a null result in the current study did not necessarily mean that the general Chinese and Western elderly populations actually hold the same opinions about this topic, for the following two reasons: 1) The wording of the statement in the questionnaire may not have been sensitive enough to pick up subtle cultural differences; and 2) perhaps while the seniors from both cultures agree with the statement quantitatively (e.g., yes, the society does stigmatize hearing loss), there are qualitative differences between the two cultures in their reasoning behind expressing such agreement (e.g., what does stigmatization mean for a hard-of-hearing person), which could only be "measured" by using in-depth open-ended interview questions. These possibilities constitute additional reasons why future studies should still consider retesting some of the survey statements that did not yield a (marginally) significant mean rating difference in the present study.

Future Directions

This thesis described an exploratory study taking ideas from past research in both cultural/medical anthropology and a variety of health care sciences to investigate the cultural differences in Chinese- and Euro-Canadian seniors' attitudes and beliefs.
concerning hearing impairment and its treatment methods. The body of the thesis will end with this paragraph, but the work started in this area of research is far from done. As Germain (1992) said, “Education, occupation, income, location of residence, religion, and other factors make for a great deal of diversity within each ethnic and racial group” (p. 2). Future studies may also want to determine which of these demographic factors to explore for their influences on the prevailing attitudes of a particular culture towards hearing loss and hearing aids. To minimize some of the confounding factors mentioned in the section above, future quantitative survey studies should not only aim for a significantly greater sample size but also make sure that different translations of the questionnaire are as equivalent as possible and that the statements are designed carefully so that there is little chance for certain key words (e.g., “health,” “disease,” “help,” “restore,” and “ashamed”) to be interpreted differently by participants from different cultural groups. It is also recommended that future qualitative interview studies incorporate questions that are more open ended in order to encourage the interviewees to explore the reasons behind their expressed beliefs and attitudes towards certain topics and the meanings they ascribe to one of those key terms mentioned earlier. Other future research directions and hypotheses that could be extrapolated from the results were outlined along with the discussions throughout this chapter. The investigator’s hope is that the present study gives researchers and clinicians alike a better understanding of what the essence of Chinese culture looks like and inspires them to reach out to more hearing-impaired Chinese individuals with culturally sensitive/competent professional services.
References


Appendix A: The English Questionnaire

Questionnaire Regarding
“Cultural Differences in Seniors' Beliefs and Coping Strategies Concerning Hearing Loss”

Section I: Demographic Information:

1. Your Full Name: _________________________

2. Your Gender: Male / Female  (please circle one)

3. Your Place of Birth (country/region): _________________________

4. Length of Residence in Canada (in years): _________________________

5. Main Language Used at Home: _________________________

6. Other Languages Used at Home (if any): _________________________

7. Which age group do you belong to? Please check one:

   □ 65 – 69

   □ 70 – 79

   □ 80 – 89

   □ 90 or older
### Section II: General Attitudes towards Hearing Loss

Please circle **one number only** in response to each statement, showing whether you:

1 – Strongly Disagree
2 – Disagree
3 – Neutral / Not Sure
4 – Agree
5 – Strongly Agree

<table>
<thead>
<tr>
<th>#</th>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Neutral/ Not Sure</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>Hearing loss impairs a person’s quality of life.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>9</td>
<td>The kinds of jobs people have throughout their lifetime influence the development of hearing loss in old age.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>10</td>
<td>People with hearing loss do not like to discuss it with other people outside the family.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>11</td>
<td>A young man is less likely to find a good job or marry well if he has a hearing loss.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>12</td>
<td>Hearing loss is a health problem.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>13</td>
<td>The kinds of food people eat throughout their lifetime influence the development of hearing loss in old age.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>14</td>
<td>People react negatively to those who have a hearing loss.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>15</td>
<td>Hearing loss is a natural part of getting old.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>16</td>
<td>Hearing loss impairs a person’s ability to socialize with other people.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>17</td>
<td>People with family members who have hearing loss are more likely to develop hearing loss.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>18</td>
<td>If older people admit having a hearing problem, they may well lose their children and grandchildren’s respect.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
### Section III: Attitudes concerning Coping Strategies

Please circle **one number only** in response to each statement, showing whether you:

1 – Strongly Disagree  
2 – Disagree  
3 – Neutral / Not Sure  
4 – Agree  
5 – Strongly Agree

<table>
<thead>
<tr>
<th>#</th>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Neutral/Not Sure</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>19</td>
<td>People’s hearing is usually very bad before they do anything about it.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>20</td>
<td>Most brand-name hearing aids are overpriced (ranging from $700 to $3000 per aid).</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>21</td>
<td>Wearing hearing aids prevents further deterioration in hearing.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>22</td>
<td>Changing diet patterns and lifestyle habits may help alleviate hearing loss.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>23</td>
<td>The best person to consult first about a hearing loss is a medical doctor.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>24</td>
<td>The ultimate goal of wearing hearing aids is to restore one’s hearing to normal.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>25</td>
<td>If children’s hearing loss does not significantly interfere with their ability to succeed in school, it is not important for them to receive any treatment for the hearing loss.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>26</td>
<td>Before trying a hearing aid, I would try other therapeutic methods first (e.g., acupuncture, massage therapy, herbal medicines, etc.).</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>27</td>
<td>It is best not to wear hearing aids all day long; allowing the ears to rest throughout the day is a good way to preserve one’s remaining hearing.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>28</td>
<td>In most cases, family members are better able than rehabilitation clinicians (e.g., audiologists) to help a person with hearing loss.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
Section IV: Attitudes and Experiences

29. Do you have a hearing loss?  
   Yes  No  Not Sure

30. Do you know what audiologists do?  
   Yes  No  Not Sure

31. Have you ever worn a hearing aid?  
   Yes  No  Not Sure

If you answered "Yes" to Question #29 above, please complete the following items #32 through #38. Otherwise, please skip down to Section V on the next page.

Please circle **one number only** in response to each statement, showing whether you:

1 – Strongly Disagree  
2 – Disagree  
3 – Neutral / Not Sure  
4 – Agree  
5 – Strongly Agree

<table>
<thead>
<tr>
<th>#</th>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Neutral/ Not Sure</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>32</td>
<td>My spouse and children are the ones who truly understand the difficulties I have with my hearing loss.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>33</td>
<td>The smaller the hearing aids are, the more likely I am going to wear them.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>34</td>
<td>I prefer not to ask someone I respect, or a stranger, to repeat even if I did not fully understand what that person had just said.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>35</td>
<td>I worry more about other health problems (such as vision loss, heart disease, dementia) than about hearing loss.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>36</td>
<td>I am ashamed of being hearing impaired.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>37</td>
<td>Even with modern technologies, hearing aids do not really compensate for hearing loss.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>38</td>
<td>Hearing loss isolates me from many social activities that I once enjoyed.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
Section V: Invitation to a Follow-up Interview

Thank you so much for completing the questionnaire above. Part of the current study involves a follow-up interview with some of the participants who completed this questionnaire. The purpose of the interview is to clarify and explore the answers participants like you gave to a subset of the items. The interview will take about 30 minutes to complete, and the entire session will be audiotaped. Any personal information recorded will be erased before any analyses take place. Your confidentiality will be protected.

Your participation in the interview would be highly appreciated. If you are willing to contribute some of your time to help us better understand the relationship between culture and attitudes towards hearing loss, please fill out your contact information below and sign the consent form on the next page. The co-investigator (Benson Hsu) will contact you to set up an appointment for the interview. Thank you very much.

Phone / Cell Phone Number: ________________________________

Address (optional): _______________________________________

Preferred Location(s) for the Interview (optional):
問卷調查
「中西文化對重聽的觀念與因應策略之差異」

第一部分：個人背景資料

1. 您的中文全名： ______________________

2. 您的性別： 男 / 女 (請圈選其一)

3. 您的出生地： ______________________

4. 請問您在加拿大總共居住了幾年？ ______________________

5. 請問您在家中最常使用那種語言？ ______________________

6. 請問您在家還會使用另外那些語言？ (如果沒有就不用填)

7. 請問您是屬於下列那一個年齡層？請勾選：

   □ 65 到 69 歲
   □ 70 到 79 歲
   □ 80 到 89 歲
   □ 90 歲以上
第二部分：對重聽的普遍觀念

請為以下各項說法圈選一個數字，表達您的看法。這些數字代表的意思如下:
1 = 您非常不同意這個說法
2 = 您有點不同意這個說法
3 = 立場中立 / 不確定
4 = 您有點同意這個說法
5 = 您非常同意這個說法

<table>
<thead>
<tr>
<th>#</th>
<th>說法</th>
<th>非常不同意</th>
<th>中立 / 不確定</th>
<th>非常同意</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>聽覺障礙降低一個人的生活品質。</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>9</td>
<td>一個人在年老的時候是否會有重聽，跟他這一生所做的工作有關。</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>10</td>
<td>有重聽的人不喜歡跟不是家裡的人討論他的聽力問題。</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>11</td>
<td>一個年輕人如果有重聽的話，他就不太可能找到一份好工作或娶到一位好妻子。</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>12</td>
<td>重聽是一種健康的問題。</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>13</td>
<td>一個人在年老的時候是否會有重聽，跟他這一生所吃的東西有關。</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>14</td>
<td>一般人會對重聽的患者投以異樣的眼光。</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>15</td>
<td>重聽是人身體老化的一種自然現象。</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>16</td>
<td>聽覺障礙減低一個人跟別人互動的能力。</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>17</td>
<td>一個近親當中如果有人有重聽的話，他自己也比較有可能罹患重聽。</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>18</td>
<td>如果一個年紀大的人公開承認他自己有重聽的話，他就很可能會失去家裡晚輩們的尊敬。</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
第三部分：對重聽的因應策略

請為以下各項說法圈選一個數字，表達您的看法。這些數字代表的意義如下：

1 = 您非常不同意這個說法
2 = 您有點不同意這個說法
3 = 立場中立 / 不確定
4 = 您有點同意這個說法
5 = 您非常同意這個說法

<table>
<thead>
<tr>
<th>#</th>
<th>說法</th>
<th>非常不同意</th>
<th>中立 / 不確定</th>
<th>非常同意</th>
</tr>
</thead>
<tbody>
<tr>
<td>19</td>
<td>一般人已經很嚴重了，才會尋求補救的方法。</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>20</td>
<td>大多數的助聽器都賣得太貴了(一具助聽器市面價 700 到 3000 元不等)。</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>21</td>
<td>戴助聽器可防止聽力繼續惡化。</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>22</td>
<td>改變飲食內容與生活習慣可幫助減輕重聽的程度。</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>23</td>
<td>諮詢受過西醫訓練的醫生應該是重聽患者尋求任何協助的第一步。</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>24</td>
<td>戴助聽器的最終目的就是要讓患者重新享有正常的聽力。</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>25</td>
<td>如果一個復健科專員的動作與表現影響他在學校的表現與成績，這個兒童就不一定需要接受聽覺方面的治療。</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>26</td>
<td>在試試別種治療重聽的方法(例如：針灸、按摩、草藥等)。</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>27</td>
<td>最好不要一整天都戴著助聽器；在一日當中給予耳朵充分的時間休息，是維護剩餘聽力的最佳辦法。</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>28</td>
<td>在多數的情況下，家屬們比復健科專員(例如：聽力學者)更能幫助重聽的患者。</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
第四部分：經驗與觀念

29. 請問您有聽力的問題嗎？
   是  否  不確定

30. 您知道「聽力學家」是做什麼的嗎？
   是  否  不確定

31. 您有戴過助聽器嗎？
   是  否  不確定

如果您在上面的第 29 題圈選「是」，請您務必完成以下的第 32 到 38 題。要不然的話，請您跳過這幾題，直接翻到下一頁的第五部分。

請為以下各項說法圈選一個數字，表達您的看法。這些數字代表的意
思如右：

<table>
<thead>
<tr>
<th>#</th>
<th>說法</th>
<th>非常不同意</th>
<th>中立 / 不確定</th>
<th>非常同意</th>
</tr>
</thead>
<tbody>
<tr>
<td>32</td>
<td>只有我的配偶及兒女們真正了解重聽為我帶來的種種生活不便。</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>33</td>
<td>助聽器越小我就越有可能使用它們。</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>34</td>
<td>當陌生人，或是我尊敬的人，在跟我說話的時候，就算有些話我沒有完全聽懂，我還是不會請他們再重複一遍。</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>35</td>
<td>其他的健康問題(例如：老花眼、心臟病、老人癡呆症等)比重聽更值得我操心。</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>36</td>
<td>我為我的聽力問題感到羞愧。</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>37</td>
<td>就算是當今最先進的助聽器仍無法取代重聽患者所失去的聽力。</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>38</td>
<td>重聽讓我無法再享受許多昔日我所熱衷的社交活動。</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

145
第五部分：敬邀您参加後續的面談研究

非常感謝您完成前幾頁的問卷調查。除了問卷部分，這項研究還包括了一對一面談的部分，而面談的對象是像您這樣已經完成問卷的人。但不是每一個完成問卷的人都必須參加此項面談研究。面談的內容與本問卷大同小異，主要的目的是讓參加者有機會用口述的方式，表達您對重聽及其因應策略的看法與感受。整個面談過程大概需要 30 分鐘的時間，而研究員會以錄音的方式記錄所有的對話。所有錄音時錄到的個人資料將會完全被清除掉，而且只有兩位主要研究員有權可聆聽與分析此面談研究所搜集到的資料。您的隱私權將獲得最大的保障。

我們由衷地感謝您對本研究的熱心支持。如果您願意撥空參加此項面談研究，並幫助我們進一步了解中西文化，與重聽態度之間的關係，請在本頁下方的空格中填寫您的聯絡資料，並且在下一頁的同意書上簽名。本研究的副研究員 Benson Hsu 將主動與您聯絡，並約定面談的時間和地點。再次感謝您參與這次的調查研究。

電話/手機號碼：____________________________________

住家地址(可不填)：____________________________________

____________________________________

____________________________________

您喜歡的可能面談地點(可填寫多項，或完全不填)：

____________________________________
Appendix C: The Interview Script

The Interview Protocol / Script for
“Cultural Differences in Seniors' Beliefs and Coping Strategies Concerning Hearing Loss”

Name of the Participant: ____________________________

➢ Time allowance: approximately 20-30 minutes
➢ Fit whatever questionnaire responses
➢ Session audio-taped by a digital voice recorder, or
➢ Note-taking by the co-investigator, if the interview is conducted over the phone

1. Knowledge about the role of audiologist and other hearing care professionals

   □ If the participant knows who an audiologist is, then “What kind of jobs/duties do you think audiologists do everyday for a living?”
   □ If the participant doesn’t know, then “Who do you think is responsible/specialized in treating hearing loss within our conventional health care system here?”
   □ “In your opinion, what kinds of people are responsible for dispensing and fitting hearing aids?”

2. Beliefs about the causes of hearing loss (Items 9, 10, 12, 13, and 18)

   □ Item 9: “Why do/don’t you think past jobs affect the development of hearing loss?”
   □ Item 12: “Why do/don’t you think hearing loss is a health problem?”
   □ Item 13: “Why do/don’t you think dietary habits affect the development of hearing loss?”
   □ Item 10: “Why do/don’t you think hearing-impaired people would be willing to discuss their problems with non-family members?”
   □ Item 18: “Why would/wouldn’t those hard-of-hearing elderly relatives lose respect?”
3. A variety of coping strategies (Items 22, 23, 25, 26, and 28)
   - Item 22: “Why does/doesn’t changing diet and lifestyle help with hearing loss?”
   - Item 23: “Why should/shouldn’t a hearing-impaired person consult a medical doctor first?”
   - Item 25: “Why should/shouldn’t those children receive treatments for hearing loss?”
   - Item 26 – if DISAGREE: “Would you ever consider trying those alternative therapeutic methods in the event when the hearing aids turned out unsuccessful?”
   - Item 26 – if AGREE: “What kinds of alternative therapeutic methods would you try to treat the symptoms of hearing loss / to prevent hearing loss? Please describe. How effective do you think each of these methods would be in treating hearing loss?”
   - Item 28: “Why do you think family members are / are not better than clinicians?”

4. Attitudes towards auditory amplification (Items 20, 24, 33, and 37)
   - Item 20 – if AGREE: “What kinds of price do you think modern hearing aids should cost?”
   - Item 24: “Why do/don’t you think the ultimate goal of using hearing aids is to restore one’s hearing to normal?”
   - Item 33 (answered or not): “If you had to wear hearing aids, would you care about whether other people could see your hearing aids in public or not?” AND “Do you think other people would regard you as less intelligent and/or less capable if they observed you wearing hearing aids?”
   - Item 37 (only if answered): “Why can/can’t hearing aids really compensate for someone’s hearing loss?”
Appendix D: Complete Tables of $t$-Test Results

TABLE D.1
Independent Samples $t$-Test Results Comparing All Chinese-Canadian and Euro-Canadian\(^1\) Participants' Responses to Items #8 - #28

<table>
<thead>
<tr>
<th>Survey Item Number</th>
<th>$t$</th>
<th>$df$</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>-.118</td>
<td>58</td>
<td>.906</td>
</tr>
<tr>
<td>9</td>
<td>-2.408</td>
<td>40.429</td>
<td>.021</td>
</tr>
<tr>
<td>10</td>
<td>-.614</td>
<td>58</td>
<td>.542</td>
</tr>
<tr>
<td>11</td>
<td>.407</td>
<td>57</td>
<td>.685</td>
</tr>
<tr>
<td>12</td>
<td>1.288</td>
<td>57</td>
<td>.203</td>
</tr>
<tr>
<td>13</td>
<td>.585</td>
<td>58</td>
<td>.561</td>
</tr>
<tr>
<td>14</td>
<td>-1.523</td>
<td>58</td>
<td>.133</td>
</tr>
<tr>
<td>15</td>
<td>2.742</td>
<td>57</td>
<td>.008</td>
</tr>
<tr>
<td>16</td>
<td>.754</td>
<td>57</td>
<td>.454</td>
</tr>
<tr>
<td>17</td>
<td>-.862</td>
<td>58</td>
<td>.392</td>
</tr>
<tr>
<td>18</td>
<td>.844</td>
<td>57</td>
<td>.402</td>
</tr>
<tr>
<td>19</td>
<td>-.497</td>
<td>57</td>
<td>.621</td>
</tr>
<tr>
<td>20</td>
<td>-.268</td>
<td>56</td>
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<tr>
<td>21</td>
<td>4.188</td>
<td>58</td>
<td>.000</td>
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<tr>
<td>22</td>
<td>1.621</td>
<td>58</td>
<td>.111</td>
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<td>23</td>
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<td>58</td>
<td>.188</td>
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<td>24</td>
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<td>58</td>
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<tr>
<td>26</td>
<td>1.921</td>
<td>58</td>
<td>.060</td>
</tr>
<tr>
<td>27</td>
<td>4.398</td>
<td>58</td>
<td>.000</td>
</tr>
<tr>
<td>28</td>
<td>3.516</td>
<td>55.134</td>
<td>.001</td>
</tr>
</tbody>
</table>

\(^1\) Chinese-Canadian $N = 30$; Euro-Canadian $N = 30$. 
TABLE D.2
Independent Samples t-Test Results Comparing Responses to Items #8 - #28, #32 - #38 by Chinese-Canadian and Euro-Canadian Participants\(^1\) Who Reported Hearing Loss

<table>
<thead>
<tr>
<th>Survey Item Number</th>
<th>(t)</th>
<th>(df)</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
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<td>.083</td>
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<td>.430</td>
<td>22</td>
<td>.671</td>
</tr>
<tr>
<td>11</td>
<td>-.862</td>
<td>22</td>
<td>.398</td>
</tr>
<tr>
<td>12</td>
<td>.085</td>
<td>21</td>
<td>.933</td>
</tr>
<tr>
<td>13</td>
<td>-1.012</td>
<td>22</td>
<td>.323</td>
</tr>
<tr>
<td>14</td>
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</tr>
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<td>-.800</td>
<td>21</td>
<td>.433</td>
</tr>
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<td>-.359</td>
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</tr>
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<td>.665</td>
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<tr>
<td>23</td>
<td>-.119</td>
<td>22</td>
<td>.906</td>
</tr>
<tr>
<td>24</td>
<td>1.447</td>
<td>22</td>
<td>.162</td>
</tr>
<tr>
<td>25</td>
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<td>.859</td>
</tr>
<tr>
<td>26</td>
<td>1.662</td>
<td>22</td>
<td>.111</td>
</tr>
<tr>
<td>27</td>
<td>2.881</td>
<td>22</td>
<td>.009</td>
</tr>
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<td>1.811</td>
<td>22</td>
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<td>32</td>
<td>.849</td>
<td>22</td>
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<td>.888</td>
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<td>35</td>
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<td>38</td>
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<td>22</td>
<td>.734</td>
</tr>
</tbody>
</table>

\(^1\) Chinese-Canadians with hearing loss \(N = 6\); Euro-Canadians with hearing loss \(N = 18\).