

Exploring Chinese-Canadians' Perspectives on Health  
-- A Quantitative Study

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### **Abstract**

Chinese have unique perspectives on health and illness, which is mostly unrecognized by western medicine. Immigration may contribute to problems with health consultations, inconvenience, and dissatisfaction. As the largest visible minority in Canada, Chinese-Canadians' perspectives on health should be studied in order to help Chinese immigrants adapt to a new health-care and health-promotion system, and keep them healthy.

A quantitative questionnaire was designed based on the findings from a pilot study and previous literature. A hundred participants were recruited from Toronto, Vancouver, Halifax, and St. Catharines. Descriptive analysis and correlation analysis were used to investigate the structure of the variables.

Findings indicated that most of their attitudes and corresponding practices to the different health aspects were positive. The relation between dietary practices and attitude was only found in small cities. Their attitudes were impacted by their length of stay in Canada. Their attitudes to regularly timed meals and psychological consultation were related to their acculturation level, as was the regularity of their practice of dental flossing. Their self-evaluated general health levels were also found to be affected by their medical history, education level, feeling to talk about sexual health, and smoking, particularly in the male subjects of the study.

In conclusion, they realized that each health aspect was important to their health. However, their practices did not bear a strong relation to their beliefs. Traditional thoughts about health resented with time. Acculturation level did not affect most of their attitudes or practices. Under pressure, the priority of the daily health practices decreased. Older persons, those with low incomes, lower education levels or families under stress need to pay more attention to their health level. In-depth future research was recommended.

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## CHAPTER ONE: INTRODUCTION

This chapter mainly includes the background and rationale of the study to build a brief idea of the importance and necessity of this study. The purpose of this study involves the exploration of three main issues. The main research question has been broken down into two specific research questions.

### 1.1 Background and Rationale

The population of Chinese immigrants increased dramatically in the last few decades, growing from 0.3% to 3.7% of the total Canadian population (Statistics Canada, 2005) and comprising the largest proportion of the visible minority population in Canada (Statistics Canada, 2005). Since 2001, Chinese (all dialects combined) constitutes the third-largest mother tongue spoken in Canada, after English and French (Statistics Canada, 2001). This demographic change increased the number of Chinese clients with whom health-service providers work and, in turn, created challenges for health-service providers attempting to understand the health status of this population (Lai, Tsang, Chappell, Lai, & Chau, 2007). The health status of Chinese communities may have a great impact both on the overall health outcomes of the Canadian population (Antecol & Bedard, 2006) as well as on Canadian immigration policies and practices (Gushulak, 2007). The health status of Chinese communities is gradually transforming the focus of academic research, making it an increasingly important health issue in Canada (Lu, Sylvestre, Melnychuk, & Li, 2008).

Immigrants often exhibit a health status superior to that experienced by the native-born population upon arriving in Canada but lose this health advantage over time— a phenomenon referred to as the Healthy Immigrant Effect or HIE (Antecol & Bedard, 2006; Hyman, 2004). HIE has been examined in relation to obesity, health-related habits such as smoking and alcohol

consumption, utilization of health services, and chronic conditions (e.g., heart disease, asthma, arthritis, diabetes) by numerous studies in both Canada (Chen, Ng, & Wilkins, 1996; Deri, 2003; Perez, 2002) and the United States (House et al., 1990; Stephen, Foote, Hendershot, & Schoenborn, 1994). However, there is still no unanimity about the existence of the HIE (Dunn & Dyck, 2000; Laroche, 2000; McDonald & Kennedy, 2004; Newbold & Danforth, 2003). Despite of dominance of Western culture and health practices in the world, different cultures still have different approaches to health (Kopec, Williams, To, & Austin, 2001). The differences between different cultures on health-related matters should be considered when researchers investigate the health status of ethnic communities in Canada.

Every culture has its own perspective and beliefs about illness and methods of health-related treatment (Lai, Tsang, Chappell, Lai, & Chau, 2007). Comparing the differences within Western cultures and the differences between eastern and Western cultures, China has its distinctive traditional approach on health, which is fundamentally different from that of Western medicine (Chao, 2007). According to Traditional Chinese Medicine (TCM), weak, stagnant, and imbalanced yin-yang Qi gives rise to health problems (Lu, 2003). In TCM, the understanding of the human body is based on the holistic understanding of the universe as described in Daoism, and the treatment of illness is based primarily on the diagnosis and differentiation of syndromes. Evaluation of a syndrome not only includes the cause, mechanism, location, and nature of the disease, but also the confrontation between the pathogenic factor and body resistance (Chao, 2007).

In contrast, Western medicine was mainly influenced by Cartesian philosophy, which separated body and mind (Lu, Sylvestre, Melnychuk, & Li, 2008). Western medicine believes that illness is related to abnormalities in the structure and function of bodily organs and systems

(Bowman & Hui, 2000). Although the definition of health in WHO mentioned that health is more than being illness free (World Health Organization, 2003). Western medicine still encompasses a range of health-care practices evolved to maintain and restore human health by the treatment and prevention of illness (Harper, 2001). At the beginning, Western medicine started at treating illness, with prevention being developed afterwards. It is opposite to the developing process of Chinese medicine, which emphasizes prevention more than treatment.

The differences have been confirmed during the utilization of the health-care and health-promotion system. Minority groups use fewer formal health-care and health-promotion services, which is inconsistent with the high incidence of certain chronic diseases or cancers in cross-sectional surveys in North America (Jackson et al., 2003). The reasons for this underutilization are postulated as culturally inappropriate services, Asian values, historical discrimination, organizational barriers, and social alienation (Ho, 1976; Lee, 1986). Culture is considered an important factor in forming and creating guidelines for health beliefs, attitudes, outcomes, and health-related behaviours (Lai et al., 2007). Therefore western measurements and approaches to health may not be appropriate tools to evaluate Chinese immigrants' health status and help them with their health problems.

Moreover, each culture has a health-care system based upon symbolic meanings, values, and behavioural norms associated with different illnesses and methods of treatment, which are culturally unique (Lai, Tsang, Chappell, Lai, & Chau, 2007). Social and scientific developments in China brought about numerous changes in traditional Chinese society (Chappell & Lai, 1998). Certain traditional Chinese values and beliefs are being undermined by increased urbanization, industrialization, and modernization (Zhu et al., 1994). TCM is no longer the only health-care system in China; instead, the Western medical system co-exists with TCM (Lai, Tsang,

Chappell, Lai, & Chau, 2007). Upon arrival in Canada, Chinese immigrants' perspectives on healing therefore could consist of both Chinese and Western approaches.

Additionally, personal experience, for example, the interactions between different cultures and personal consultation experience after they immigrated to Canada, could influence the meaning of health to them (Lai, Tsang, Chappell, Lai, & Chau, 2007). Even though some researchers claim that assimilation and acculturation would not change any overarching cultural beliefs (Henderson, 1996), the shifts of the original cultural behaviours, beliefs, and values are still traceable (McDonald & Kennedy, 2005). Therefore, in order to reflect Chinese-Canadians' health status as close as possible to their real situation, it would be helpful to explore their firsthand perspectives on health.

In addition, according to Statistics Canada (2001), China has been the largest source of immigration to Canada since at least 2001. The health and immigrant life of the large number of Chinese immigrants should receive scientific attention, but little research has focused exclusively on Chinese-Canadians' health status. Due to the changes and differences that already exist or might happen, Chinese-Canadians' perspectives on health should be explored in order to have in-depth study on their health status, perceptions about health-prevention campaigns, and utilization of health-care and promotion system. The current study explores Chinese-Canadians' attitudes, health-related practices, and correlations between attitude and practice, in order to structure their perspectives on health. Few studies have been done in this area. This study proposes to fill this gap.

## **1.2 Purpose of the Study**

The purpose of the study was to employ a quantitative survey to investigate the profile of Chinese-Canadians' attitudes toward certain health-related beliefs and health practices over the

course of their immigration experience in Canada. More specifically, the goal was to examine what are Chinese-Canadians' attitudes about the importance of Chinese diet, Fengshui, Chinese alcohol culture, oral health, psychological health, social relation, and sexual health. A secondary goal was to explore how their health-related beliefs and practices related to their acculturation levels. The data were collected through quantitative questionnaire and analyzed by statistical quantitative methods.

This study offered Chinese-Canadians an opportunity to reflect on their own health perceptions and practices, as well as on East-West cultural integration with respect to health. Results of the study hopefully will help health-care and health-promotion providers adopt culturally appropriate practices in the Chinese community and better understand Chinese-Canadians' health problems. Then it is hoped that this study will improve and benefit the life of the Chinese community after immigration. Due to the significant problems associated with the cultural discrimination, an open mind or wider world view could be displayed by doctors, nurses, caregivers, social workers, and health science researchers to help other ethnic communities in North America.

### **1.3 Research Questions**

This study has one general research question and two specific research questions. The general research question is: What are Chinese-Canadians' perspectives on health?

The specific research questions are:

1. What are the participants' beliefs and practice of health?
2. How is acculturation related to their beliefs and practice?

## CHAPTER TWO: LITERATURE REVIEW

This chapter includes literature about Yin-yang Theory and Traditional Chinese Medicine (TCM), underutilization of health services, and acculturation. Although currently Western medicine has a dominative position in the medical world, TCM exists as a context for Chinese. Different cultural beliefs and habits are the important origin of these barriers and problems from clinical interactions. However, due to environmental changes made by immigration, Chinese immigrants are trying to integrate into the new society, which pointed out that acculturation may be another important issue in their “new” health-related beliefs and practices.

### 2.1 Background

According to Statistics Canada (2001), there are nearly one million Chinese immigrants in Canada, which makes Chinese immigrants the largest non-European ethnic group in Canada. When researchers compared health status between the native-born and the immigrant, they found that immigrants are healthier than their domestic counterparts, but this advantage disappears over time (Antecol & Bedard, 2006; House et al., 1990; Stephen, Foote, Hendershot, & Schoenborn, 1994). Due to the different understandings of health between different cultures, underutilization of health services in immigrants were largely exposed in the process of consultation surveys (Ho, 1976; Lee, 1986). The determinants that impact domestic Canadians’ health status were found to be different to immigrants’ health status (Hyman, 2004). Cultural beliefs and values to health, culturally based health-care system, and personal experiences were the main factors affecting people’s understanding and behaviour of health (Lai, Tsang, Chappell, Lai, & Chau, 2007). Under the influence of TCM, Chinese immigrants have substantially different and original perspectives of health and illness, treatment and diagnosis, comparing to the European majority of the population.

## 2.2 Yin-Yang Theory and TCM

Yin-Yang theory was considered as a typical Chinese correlative cosmology, which locates human flourishing within a rich and deep perspective highlighting the interrelations of the cosmos and human nature (Wang, 2005). The main element of yin-yang theory is there are two opposite aspects (yin and yang, and usually defined as hot and cold, light and dark, etc.) of anything in the cosmos, which should be kept in a dynamic balance (Lu, 2004). The movement and changes of yin and yang give impetus to the development of everything. Although yin and yang represent two aspects of everything, the nature of yin and yang is interdependent. Under this holistic approach, human is a part of the universe, which can not be isolated. Humans have to maintain a dynamic balance to keep healthy and this dynamic balance is not only inside of the human body, but also broadly applied in the whole universe (Lu, 2004).

The yin-yang theory is used extensively in TCM to explain the histological structure, physiological function, and pathological changes of the human body, and to serve as a guide for diagnosis and treatment (TCM Basics, n.d.). The Yin-Yang theory asserts that there exists an organic connection between all tissues and structures which are considered as a whole, for example, heat yin and heat yang, kidney yin and kidney yang, front as yin and back as yang. In TCM, the physiological functions of the organs and their substances are not separately related to yin and yang. For example, the activities (yang) of a particular organ are based on that organ's substance (yin.) If either of them is absent, the other cannot function. The Yin-Yang theory holds that disease is a result of an imbalance between yin and yang which leads to the hyperactivity or hypoactivity of yin and yang. Therefore, the diagnosis and treatment of TCM were based on the body's condition of yin and yang using the objects from the nature to help maintain the balance.

Feng Shui as a treatment was used to be prevalent in the old days. According to Feng Shui, people's environments can reflect the obstacles and impediments in their relationships, career, health, and family etc. (Bruun, 2003). Feng Shui suggests that the surroundings dramatically affect human lives—either fortuitously or negatively. Through Feng Shui truths and principles, people learn methods to maintain the energy in their home and business to bring about positive change in their life (Designing Online, 2005). Although Feng Shui has been around for over 3,000 years and is originally a Chinese philosophy, it has found increasing popularity in the West due to its extraordinary positive effects on people, including improved health, rewarding relationships, and an increase in happiness and prosperity (Tchi, 2008).

### **2.3 Underutilization of Health Services**

Chinese immigrants experience barriers to using health services in Canada. Different traditions may cause the most problems. The incidence of Chinese women receiving pap smears and mammography screens was significantly lower than the incidence of the same testing among North American women (Jackson et al., 2003). However, their incidence of cervical and breast cancer was not lower than the native women, and was actually somewhat higher than the average (Guo et al., 1994; Lee-Lin et al., 2007). Medical health and oral health services were the other underutilized health services by the Chinese in Canada, particularly the Chinese elderly.

#### *2.3.1 Gender Differences In Utilization of Health Services*

The problem of Chinese women underutilizing health services was significant in pap smears and mammography screens (Jackson et al., 2003; Jackson et al., 2002). Their beliefs and attitude about sex were the important issues affecting their behaviour on these two screens (Brathwaite & Williams, 2003). Also their beliefs about Childbirth and practices in postnatal period were different from western women, which brought inconvenience both in their healing



and consultation process (Morris et al., 1999). In contrast, little concern about male Chinese has been found.

### 2.3.1.1 Pap smears and mammography

Breast cancer is the most common malignancy among Chinese women (Miller et al., 1996). Immigrants from China to North America are associated with a 20% to 50% higher incidence of breast cancer than the average (Jackson et al., 2003). Cervical cancer is a significant health problem in Chinese women as well, being the second leading cause of cancer deaths in Mainland China (Guo et al., 1994; Lee-Lin et al., 2007). Data from the Surveillance Epidemiology and End Results (SEER) program show that Asian-born Chinese women have higher cervical cancer incidence rates than Asian women born in North America (13.3 vs. 9.8 per 100,000 women), revealing the high risk of cervical cancer among female Chinese immigrants (Jackson et al., 2002). Nonetheless, surveys of Chinese-Canadians demonstrate low levels of participation in screening mammography and pap smears in North America (Jackson et al., 2003; Jackson et al., 2002). The barriers that push away these Chinese women from seeking health-care services are not only caused by language but moreover by the conflicts between different cultural beliefs and habits (Brathwaite & Williams, 2003).

“Sex” is a taboo topic for Asians (Chui, 2000). Under the influence of this idea, traditional Chinese women, especially those who are unmarried, are very reluctant to gain knowledge of breast and cervical health and therefore do not pay much attention to screening prevention (Morris et al., 1999). The culture barriers are significant not only in patients, but also in Chinese physicians. Many physicians and Chinese women are not comfortable with discussing breast and gynaecological matters. As a result, Chinese immigrants’ lack of knowledge about Pap test and mammography allows them to rarely utilize the health-care service. Sent, Ballem,

Paluck, Yelland, and Vogel (1998) and Jackson et al. (2002) discovered that many Chinese women who lived in North America had never undergone Pap Smears or mammography screening. In addition, the language barrier is another obstacle keeping them far away from these tests. Hiatt and associates (2001) reported that non-English speaking Chinese women had the lowest level of participation in any screening tests for the prevention of breast and/or cervical cancer.

Apart from the cultural barriers that exist among the patient and doctors, the media involved in health-promotion in North America also create obstacles for Chinese women. Radio or television promotions are usually designed for Western audiences and are difficult for many Chinese women to understand, even without a language problem. Chinese women have negative attitudes toward these tests because the problems revealed by the tests are related to moral issues in Chinese culture (Yu, Wu, & Mood, 2005). Traditional Chinese women usually choose to avoid looking at information related to these issues in order to maintain or indicate their innocence. In order to encourage Chinese women to take prevention screening tests, health promoters should pay extra attention to the two major barriers stated above.

#### 2.3.1.2 Childbirth and postnatal period

Childbirth is a significant and deeply felt physiologic, cognitive, cultural, social, and spiritual experience (Callister, Sementic, & Foster, 1999) that is usually viewed as a normal, healthy event in the life of a woman. However, in order to decrease the rates of morbidity and mortality, childbirth has been medicalized in much of the current Western society (Brathwaite & Williams, 2003). As a result, pregnancy has gradually been redefined as an abnormal, problematic condition requiring machine-based technology and controlled by medical professionals (Rudolfsdottir, 2000). In fact, the meaning of childbirth to an individual is highly

relevant to one's cultural preferences (Brathwaite & Williams, 2003). Due to the cultural differences between Chinese and Canadian communities, the divergence regarding beliefs and practices of childbirth is exposed when pregnant Chinese women seek medical help in Canada.

Chinese have different beliefs and practices during pregnancy, labour, and delivery, and especially during the postnatal period. In China, the postnatal period has a special name: "zuo yue zi" (Morris et al., 1999). During the postnatal period, women have to be confined to the house for nearly one month to avoid getting "cold" while maintaining a special diet balanced according to the principles of yin and yang. This yin-yang balance rebuilding process is very important for these women's health for the rest of their lives. Certain food, for example, a dish made with ganger and pettitoes, which they believe could affect their yin-yang balance in the future, should be taken with caution; some other foods, considered as "cold", for example, most fruits, in TCM should be avoided (Brathwaite & Williams, 2003). According to this food therapy, Chinese women would regain their balance quickly (Sent, Ballem, Paluck, Yelland, & Vogel., 1998).

Although the divergence is significant, it still could be compliant in Chinese women's adaptation of Canadian society (Morris et al., 1999). Brathwaite and Williams (2003) mentioned in their research that some Chinese women had no food or activity restrictions and did not adhere to any specific rituals and restrictions. The relevant traditional supports during the postnatal period that Chinese women need are difficult to accomplish in Canada. First, the environmental support is not strong as in China. People around will help the mother to follow certain procedure. Mothers will be very protective by their family members (husband, parents and relatives). Second, the taboos and restrictions are usually delivered generation by generation; the young

generation could not keep restrictions and taboos without instruction from or modelling by their mothers. As a result, Chinese women may shift their behaviours about childbirth eventually.

### 2.3.1.3 Health Services Used by Chinese Men

Unlike studies involving Chinese women few previous studies reported male Chinese's barriers specifically in any field of using these health services in Canada, although testicular cancer and prostate cancer are the common among men. This may be because, in one term, the ratio of prostate cancer in males was low in Chinese (Wang, Ramcharan, & Love, 1989); and in the other term testicular cancer was usually prevented by self-examination. It seems difficult for researcher to investigate their problems about their utilization of health services from these sources.

### 2.3.2 *Mental Health*

Asians tend to under-use health services, particularly mental health services, compared with native Canadians (Whitley, Kirmayer, & Groleau, 2006). Mental illness is often manifested in socially disturbing, deviant behaviour, which usually brings extreme shame and guilt to the family in Chinese culture (Hsu, 1985). Although both traditional Chinese culture and modern Western concepts of family acknowledge the important role the family plays in individual behaviour, Chinese carry this further (Hsu, 1985). The family is bonded with the individual behaviours that represent its collective qualities (Hsu, 1985). If one member fails or displays unacceptable, deviant behaviour, the whole family is shamed. Therefore, the presence of a mentally ill person in the family is interpreted as the consequences of family ancestors having done something wrong in the past (Hsu, 1985). Lin and Lin (1981) indicate that Chinese have a strong tendency to keep family members' psychotic problems within families. As a result,

family's feelings of shame and desires to keep the disturbed members' behaviours from public attention may inhibit utilization of professional mental health recourses.

Additionally, in TCM, mental illness is caused by both internal and external imbalance. The internal imbalance of the five elements would cause emotional imbalance (such as unsatisfied desires, repressed anger, and pent-up feelings) was emphasized as the main factor giving rise to mental problems (Kang, 1985). However, Zhu Tanxi declared that treatment of mental illness should go beyond the area of medicine and acupuncture. Environmental disturbances are regarded as another cause of mental illness, which is caused by oppressive air, for instance, abnormality in the weather (Kang, 1985). The changes brought by immigration may shift their balance. In the maintaining process, family members' supports are important on both emotional and physical aspects (Hsu, 1985). Because of absence of relative or family members around and different cultural perspectives in seeking professional help, the Chinese is not getting adequately served by Canadian social agencies when they need it (Yuen, Landreth, & Baggerly, 2002).

The prevalence of depressive symptoms in the elderly Chinese population was much higher than the usual 10% to 15% of the general population in Canada (Lai, 2004a). About one-quarter of the elderly Chinese immigrants reported having at least a mild level of depressive symptoms (Lai, 2004b). The main problems for the Chinese elderly were related to social support, level of financial adequacy, cultural values, and cultural barriers (Lai, 2004a, 2004b). However, there is scant research related to other Chinese age groups. Otherwise, extra attention on cultural uniqueness of service users is required. Thus, discussions with close friends, self-discipline, and physical cures are more acceptable than going to seek help from a professional "stranger" (Yuen, Landreth, & Baggerly, 2002). Therefore, improving elderly Chinese

immigrants' mental health status should focus on improving relationships among family members, increasing their knowledge about self-adjustment, and social support (Lai, 2004a, 2004b).

### *2.3.3 Oral Health*

Immigrants in general were more likely than native-born Canadians to visit a dentist according to Statistic Canada's 1996-1997 survey (Newbold & Patel, 2006). However, underutilization of dental care was observed in elderly Chinese persons in both Canada and the United States (Lai & Hui, 2007; Wu, Tran, & Khatutsky, 2005). Use of dental services in immigration communities is positively associated with level of education, income adequacy, and the presence of dental insurance, but negatively associated with age (Newbold & Patel, 2006). Age, gender, education, smoking behaviour, original region, duration of stay in Canada, social support, and dental care needs are found to significantly affect elderly Chinese in dental service use (Lai & Hui, 2007; Wu, Tran, & Khatutsky, 2005). Therefore demographic variables, cultural characteristics, and background should be considered when researchers promote oral health (Lai & Hui, 2007).

As an essentially preventable disease, dental disease has an interesting status in the Chinese health-care system, which relies on daily prevention rather than cure (Louie, 1978). Toothbrush, tooth stick, silver toothpicks, and herbs and powders have been prevalently used since 366 CE in China (Chou, 1991). The Chinese believe that dental diseases were harmful to the body as a whole (Tai, Zhou, Qian, & Yuan, 1992) and people in urban areas brush their teeth at least once daily (Luan, Wang, & Cao, 1993). They were as much concerned about their oral hygiene as their oral health care (Proshauer, 1946). Even though it is reported that these dental productions has been used since 6000BC (Xu & MacEntee, 1994), oral health care was not

perceived as important in China for a long period (Lin & Schwarz, 2001). In the early 19th century, with the rapid development of economics and increasing international relations, medico-practices in China were modified to accommodate Western techniques (Lin & Schwarz, 2001; Xu & MacEntee, 1994). The number of dental care services is visibly growing, especially in recent decades, but the results of oral health behaviour among Chinese were still mainly related to tooth-brushing habits (Luan, Wang, & Cao, 1993; Tai, Zhou, Qian, & Yuan, 1992).

#### *2.3.4 Problems during Health Consultation Interviews*

Bioethics as a discipline does not formally exist in Chinese culture (Bowman & Hui, 2000). Much of conventional Western bioethical analysis is based on autonomy versus paternalism and duties versus rights (Bowman & Hui, 2000). Consequently, perceptible conflicts naturally emerge when Chinese patients meet Canadian doctors. First, conflict yields in the process of inquiry. In Canada, nurses are usually the first to collect information related to symptoms and the patient's background. Most often, the information is collected by yes-no questions, or a few open-questions, which provides few details from which doctors may diagnose. In contrast, traditional Chinese doctors are the first to collect patients' information, which provides first hand information about the patients. These doctors want to know "how it happened," "what did you do," "any change in life," and so on. Therefore, when Chinese patients meet Canadian doctors, they are frustrated that the doctors could not fully understand their problems because of this Western type of diagnosis process. The doctors even focus on treating one problem per visit and leave other problems behind. When Chinese patients receive a prescription from the doctor, they are surprised at the lack of information related to medicinal ingredients and directions for use. In Canada, it is not the doctors' but the pharmacists' duty to explain the usage of the medicine to the patients, while Chinese patients would rather hear it

from the doctors as they are giving the prescriptions. Medical records such as blood tests, urine tests, and X-ray pictures are considered properties of the hospital, which is contrary to Chinese belief that those are personal belongings and should be kept by the patients themselves.

#### **2.4 Acculturation in Immigrants**

Redfield, Linton, and Herskovits (1936) indicate that “acculturation comprehends those phenomena which result when groups of individuals having different cultures come into continuous first-hand contact with subsequent changes in the original culture patterns of either or both groups” (p. 149). Acculturation is a dual process of cultural and psychological change that takes place as a result of contact between two or more cultural groups and their individual members. Acculturation involves changes in social structures and institutions and in cultural practices at the group level and changes in persons’ behavioural repertoire at the individual level (Berry, 2005).

Contact participation and cultural maintenance are the two principles in Berry’s acculturation mode. The status of people’s contact participation depends on what is the extent individual’s value and whether he/she seeks out contact with those outside their own group. The status of people’s cultural maintenance depends on what is the extent individual’s value and whether he/she wishes to maintain their cultural identity. Based on the two questions: 1. is it considered to be of value to maintain one’s identity and characteristics; 2. Is it considered to be of value to maintain relationships with larger society, there are four strategies of acculturation: (a) Assimilation—individuals do not wish to maintain their cultural heritage but seek daily interaction with larger society; (b) Separation—individuals wish to maintain their culture but avoid interaction with larger society; (c) Integration—individuals are interested in simultaneously maintaining original culture and adopting some dominant societal values; and (d)



Marginalization—individuals are little interested in interacting with the dominant society or maintaining their culture (Berry, 1997, 2005) (See Table 1).

Acculturation can be found in immigrants' life practices. For example, after immigrants integrated into the domestic dietary practices, their incidence of cardio disease and obesity shifted to minor the condition of the domestic population (McDonald & Kennedy, 2005). Furthermore, due to the environmental changes by immigration, many immigrants had depression and stress problems. Canadian researchers have identified high prevalence of depression in Chinese elderly (Lai, 2004a; 2004b). Acculturation stress was the trigger of immigrants' health problems.

#### *2.4.1 Dietary Acculturation*

In Chinese culture, the kind and amount of food intake every day is intimately relevant to their health. Food affects health as a matter of general principle that the selection of the right food at any particular time must depend upon one's health condition at that time (Chang, 1977). Under the yin-yang theory, people have to use various kinds of food ("yin" or "yang") to balance their body yin-yang Qi in order to adapt to changes of the environment and prevent themselves from illness (Chang, 1977). Food functions as medicine in their daily life. Diet is regarded as the most important to their health.

Chinese have strong preferences for their diet. They prefer Chinese groceries and cuisines rather than any others (Lu, Sylvestre, Melnychuk, & Li, 2008). They believe that Chinese food is healthy, although it takes a long time to prepare and cook (Lu, Sylvestre, Melnychuk, & Li, 2008). The most important element in Chinese culture is that food and drink are associated not only with survival, but also enjoyment, illness prevention, treatment, and restoration (Wang, 2003). Chinese culture has its long-established and unique cultural beliefs towards health and

illness, which correspond to particular eating habits and food choices (Satia-Abouta, Patterson, Neuhouser, & Elder, 2002). It includes specific guidelines on how to classify, combine, and cook foods. There are some general principles of Chinese diet: eat at fixed, regular times; do not drink excessively; select food according to seasons and environmental conditions; and select food according to one's state of health and body type (Scott, 2000). Food plays an important role in maintaining good health, even preventing, ameliorating, and curing some diseases (Hyatt, 1978; Tai, 1982). Research indicates that incidents of chronic diseases are attributed to different food choices (Satia-About et al., 2001).

In the West, people view eating as a task, which usually makes them focus on the intake of calories and nutrition (Lu, Sylvestre, Melnychuk, & Li, 2008). The nutrition pyramid in Western society is very popular. The intake of each type of food is quantified in a chart for people to follow. Even though Canadians' Food guideline has been changed year by year to lead Canadians to have healthy eating habits, fast food and/or "junk food" is still part of a typical diet in Canada (Statistics Canada, 2004). They still prefer to have more meat than vegetables in a meal.

The preference for Chinese foods does not keep Chinese-Canadians away from incorporating Western practices, although many Chinese immigrants realize that junk food affects their health. Dietary acculturation has been gradually introduced into the Chinese community, even in the so-called "Chinatowns." This acculturation happened at two levels: individual level and group level (Satia-Abouta et al., 2001; Satia-Abouta, Patterson, Kristal, Teh, & Tu, 2002). Individual level refers to change in personal attitude, beliefs, habits, and behaviours. Group level refers to physical, biological, political, economic, and cultural changes. In fact, Chinese immigrants sometimes combine Chinese cooking with meat prepared in a

Western style, canned food, and frozen vegetables although they cook them in the framework of Chinese cuisine, they creating culturally merged, new types of foods (Lu, Sylvestre, Melnychuk, & Li, 2008). Therefore, health beliefs, attitudes, and environment could affect Chinese immigrants' dietary choices and health.

#### *2.4.2 Acculturation Stress*

Acculturation stress is the stress associated with adjusting to a new cultural environment (Berry, 1997, 2003, 2005), which could be psychological stress, social stress, or physical stress; it leads to a reduction in health status (Hwang & Ting, 2008). Linguistic challenges, loss of social support, difficulty of establishing new social ties, disruptions in family dynamics, difficulty in finding jobs, discrimination, and non-acceptance by the host culture could be the difficulties that the individuals have to cope with in the process of acculturation (Hwang & Ting, 2008).

##### *2.4.2.1 Income and employment*

Income, social status, and employment are three important determinants of Canadian immigrants' health (Hyman, 2004). In 1980, immigrants to Canada accounted for 20% of low-income earners and 20% of the total population; by 2002 the proportion had risen to 29% of all low earners, yet they represented only 22% of the total population (Statistics Canada, 2003). The significant increase in poverty rates among immigrants over the past two decades, especially among Asian, African, and southern European groups, occurred independently of education and age group (Picot & Hou, 2003). Health-related habits such as smoking are significantly related to low socioeconomic status (Acevedo-Garcia, Pan, Jun, Osypuk, & Emmons, 2005). According to data from Statistics Canada (2006), Asian immigrants became the largest population having the lowest income in Canada. Even though Chinese immigrants have an average higher income

among Asian immigrants, they still have much lower income than the Canadian population as a whole. In addition, 31% of Chinese immigrants worked as part-time workers, especially new arrivals. Cholakis (2005) indicated that because of Canadian employment policies, most immigrants who have education certifications or technical diplomas have not received the same level of recognition as local education certifications or technical diplomas, which may cause stress and even mental health problems in the Chinese community.

#### 2.4.2.1 Family.

Most Chinese families are under the one-child-per-family policy in China, which has created great stress for Chinese families. Children growing up under this policy are more easily spoiled and often exhibit some undesirable behaviour (Tao & Chiu, 1985). Often, in one-child families, parents are overly worried about their respective child's health, though their concerns risk putting undue pressure on their child with regards to weight, extravagance, or laziness (Tao & Chiu, 1985). Couples have to give material and psychological support to their child and parents on a regular basis, which brings about massive emotional and financial pressure (Tao & Chiu, 1985).

### 2.5 Summary

Based on the previous studies, Yin-yang theory and TCM have affected Chinese for a long period of time. Even though the scientific impacts promoted the co-existence of Eastern and Western health systems in China, how much these Chinese immigrants believe in the two approaches is still unknown. The underutilization of Canadian health services by Chinese immigrants indicated the essential differences between different cultures. In order to help each ethnic groups to keep health in their immigration, their different approaches should be considered and studied. However, the impact of the experience in their process of acculturation seems

related to their changing of health approaches. Therefore, original cultural approaches might not be appropriate to apply on Chinese immigrants, which may signify the further research directions.

## CHAPTER THREE: METHODOLOGY

This thesis-based research project is an integrated part of a larger project funded by a Social Sciences and Humanities Research Council (SSHRC)-Sport Canada Joint Initiative Grant. The larger project primarily has two parts, quantitative and qualitative. The quantitative approach involves a survey, which is the focus of the present thesis work. The data used in this research and the other qualitative research was collected at the same time, which required the consideration of the number of participants and data collection different than usual quantitative studies.

### 3.1 Participants

The current project involved 100 first-generation Chinese immigrants recruited from four representative cities across Canada: Toronto, Vancouver, Halifax, and St. Catharines. Seventy-two percent of Chinese immigrants live in the Toronto and Vancouver regions, which provide the sample population with a wide range of age, employment, income, and residency conditions (Statistics Canada, 2001). The sample from these two cities was expected to be representative of the Chinese immigrants living in these two cities. However, other cities with few Chinese immigrants should be covered as well, in order to reflect the different situation of Chinese immigrants in different types of regions. Therefore, the City of St. Catharines in the Niagara Region was chosen as a representative city with few Chinese immigrants and served as the research centre. In addition, Halifax was chosen as the largest immigration city in the east (Statistics Canada, 2008). In order to be eligible to participate in this project, each participant had to be at least 25 years of age; be a first-generation immigrant; be currently living in one of the four cities noted above; be a Canadian citizen or have at least one-year's residency in Canada as an immigrant; be primarily though not exclusively from mainland China, Hong Kong, or

Taiwan; and be fluent in Mandarin, Cantonese, or English. Participants were selected regardless of their gender, health condition, marital status, employment/unemployment status, and/or whether or not they had children.

In order to make the representative of the participants as high as possible, the sample size, age, and gender distribution in the recruitment was based on Chinese immigrants' statistical data in Canada. Close to 45% of foreign-born Canadians of Chinese origin were born in Mainland China, while approximately 30% were born in Hong Kong, and almost 10% were from Taiwan (Statistics Canada, 2001). However, in each recruitment city, the proportion of Chinese origin is different from the proportion of the population, so the participants were recruited differently in each city based on their origin (See Table 2). According to the statistical data, the participants from mainland China, Hong Kong, and Taiwan should be recruited respectively as 63.8%, 27.3%, and 8.9%. However, the participants were recruited in different percentage. In Halifax and St. Catharines, for instance the Taiwanese population is almost non-existent so according to the percentages of Taiwanese and the sample size of this research, none of them should be recruited in statistic approach. As the recruitment was from a bigger project, even though the data from the small number of minority (Taiwan) could bring large bias and usually were ignored in quantitative research, which were usually cherished by qualitative research, participants with Taiwanese heritage were still recruited in the two small cities. Therefore, the percentages of participants from each place were 67% from Mainland China, 27% from Hong Kong, and 10% from Taiwan (See Table 2).

For historical reasons, the age distribution of the Chinese community was considered important since different generations of Chinese could carry different levels of cultural beliefs and values. Based on the data from Statistics Canada (2001), 33.4% of the total population of

Chinese immigrant was aged 25 to 44 years old; 22.1% was aged 45 to 64 years old; and only 9.5% was aged 65 years old and over. In order to make the sample represent the population as well as possible, the participants were recruited according to these percentages (See Table 3). Additionally, there are comparable numbers of male and female Chinese immigrants, so both genders were recruited equally, although more women than men participated.

### **3.2 Instrument**

The instrument used in this study has been developed and refined in a pilot study. Its face validity was established by consulting over 30 scholars and professionals in the areas of general health sciences, medicine, nutrition, oral health, psychology, sociology, cultural studies, health education, physical education, and kinesiology. It consists of the following eight aspects (See details in Appendix C).

#### *3.2.1 Demographic Questions*

Variables including age, gender, height, weight, educational level, employment, income, immigration time, residency, marriage, number of children, condition of health insurance and benefits, health status, and disease history were reported on the questionnaire. Age, immigration time, and educational level were based on self-reported data of participants reflecting their relations to health problems or health status. Questions relating to height and weight were also self-reported and included to reveal immigrants' BMI or possible overweight or obesity ratio and gender difference.

Moreover, in order to confirm the statement that income and employment could positively affect Chinese immigrants' health status (Picot & Hou, 2003), income and employment questions were asked explicitly. Participants were asked information about their present job, including job title and employment type (i.e., part time or full time). Based on



Statistics Canada data from 2001 to 2005, the low annual income is \$15,192 in St. Catharines, \$27,500 in Toronto, and \$33,361 in Ontario. Although there is no standard data about low income in Canada, participants were asked to rate their level of income (1 = under \$20,000; 2 = \$20,001 to \$40,000; 3 = \$40,001 to \$60,000; 4 = \$60,001 to \$80,000; 5 = \$80,001 to \$100,000; 6 = \$100,000 and above).

### *3.3.2 Dietary Questions*

According to acculturation scales provided by Satia-About, Patterson, Kristal, Hislop, Yasui, and Taylor (2001), factors affecting immigrants' eating habits and health status include cultural beliefs and attitudes, in addition to socioeconomic and demographic factors. Participants were asked to rate the importance of a Chinese diet in their daily life across a 5-point Likert-type scale ranging from 1 (= not important at all) to 5 (= very important). The frequency of purchasing Chinese groceries and having Chinese meals were rated across 5-point scales (respectively as 1 = do not purchase at all; 2 = fewer times than once a month; 3 = once a month; 4 = twice a month; 5 = at least once a week; and 1 = fewer than one Chinese meal per week; 2 = one Chinese meal per week; 3 = one Chinese meal every few days; 4 = one Chinese meal (either lunch or dinner) per day; 5 = every major meal (lunch and dinner) or every meal. Dietary attitude, grocery purchasing, and cooking preference were expected to reflect the extent of acculturation related to host-country dietary habits. Therefore,<sup>1</sup> the questions contained the participants' frequency of having Western fast food, which was rated across 5-point scales (1 = fewer than once a month; 2 = monthly; 3 = biweekly; 4 = weekly; 5 = daily).

### *3.2.3 Oral Health Questions*

According to previous research (Chou, 1991; Proshauer, 1946; Ti, 1935; Xu & MacEntee, 1994), Chinese have special dental beliefs and dental hygiene methods that combine traditional

and Western dental techniques. In order to explore Chinese immigrants' habits on dental care, questions related to oral health covered people's personal attitudes towards dental care, regular check-ups, daily habits of dental cleaning, and preferred method(s) of dental health maintenance. The importance of dental care was rated across a 5-point Likert-type scale ranging from 1 (= not important at all) to 5 (= very important). Regular check-ups and cleaning (at least twice a year) were rated as dichotomy (1 = yes; 2 = no). The frequency of brushing teeth was rated across 5-point scales (1= never; 2 = once a week or a few times a week; 3 = once daily; 4 = twice daily; 5 = after each meal). The frequency of regular dental flossing was rated across 5- point scales (1= never; 2 = once a week; 3 = a few times a week; 4 = daily; 5 = more than once a day).

#### *3.2.4 Alcohol and Fengshui*

In order to reflect the extent to carrying traditional Chinese cultures, such as "Fengshui" and "alcohol culture," participants were asked to rate their attitudes and feelings about Fengshui and alcohol culture across 5-point Likert-scales ranging from 1 (= do not believe/agree at all) to 5 (= strongly believe/agree). Additionally, they were asked to recall their daily frequency of drinking (1 = never; 2 = once a month or a few times in a year; 3 = once a week; 4 = a few times in a week; 5 = daily). Tobacco use (i.e., were they smokers or not) was asked about as well (1 = yes; 2 = no).

#### *3.2.5 Psychological Health Questions*

Many previous studies (Chappell & Lai, 1998; Hwang & Ting, 2008; Lai, 2000) revealed the problems and barriers facing elderly Chinese immigrants seeking psychological help in Canada. Questions relating to psychological health first asked about participants' attitudes on psychological health, which was rated across 5-point Likert-type scales ranging from 1 (= not important at all) to 5 (= very important). Participants were also asked to rate their feelings about

talking about psychological health in general across a 5-point Likert scale ranging from 1 (= very uncomfortable) to 5 (= very comfortable).

Moreover, Kuo (1985), Lee (1985), and Li (1985) pointed out that language, social stress, and family were stressful factors facing contemporary Chinese overseas. In order to explore whether those findings could be broadened into the whole community of Chinese immigrants in Canada, participants were asked to evaluate their stress and pressure in terms of six items: study, job, finance, family, language, and cultural conflict. Each item was rated across a 5-point Likert-type scale ranging from 1 (= no stress at all) to 5 (= very stressful).

Additionally, China has its special demographic policy, so that first-generation couples with only one child would be particularly different than families with several children (Tao & Chui, 1985). Therefore, participants were asked about their suggestion on seeing psychological consultation to their parents and/or their child or children if they had mental health problems, besides themselves. Accordingly, it could be detected whether their attention on children would be different; whether elderly Chinese were ignored, or even abused in terms of mental health. Also, based on their answers, it could reveal some cultural beliefs and/or attitudes about health. Each question was rated across 5-point Likert-type scales ranging from 1 (= absolutely not) to 5 (= absolutely).

### *3.2.6 Sexual Questions*

In order to confirm the barriers that could affect women's utilization rate of Pap or mammography screening (Brathwaite & Williams, 2003; Lee-Lin, Menon, Pett, Nail, Lee, & Mooney, 2007; Lee-Lin et al., 2007; Morris et al., 1999; Sent, Ballem, Paluck, Yelland, & Vogel., 1998), participants' perspectives towards sexual health were rated using 5-point Likert-type questions ranging from 1 (= not important at all) to 5 (= very important); and their attitudes

to the issue of sexual health were rated across 5-point Likert-type questions ranging from 1 (= very uncomfortable) to 5 (= very comfortable). Although the questions around sexual health were limited on the questionnaire, they were still expected to reflect the participants' perspectives on health.

### *3.2.7 Acculturation Questions*

According to Berry's theory (2005) about acculturation, relationships sought among groups and maintenance of heritage and identity would be two issues that affect people's acculturation level. In order to generally reflect the person's adaptation level, participants would be asked to evaluate their own level of acculturation and the people around them across a 4-point scale (4 = Assimilation: individuals do not wish to maintain their cultural heritage and seek daily interaction with larger society; 3 = Integration: simultaneous adherence to traditional culture and adoption of some dominant societal values; 2 = Marginalization: alienation from the dominant society together with loss of cultural identity; 1 = Separation: the self-imposed withdrawal from the dominant society while maintaining a traditional cultural identity). In addition, the participants were asked to identify themselves across a 5-point scale (5 = still 100% Chinese; 4 = mostly Chinese, some Canadian; 3 = half Chinese and half Canadian; 2 = mostly Canadian, some Chinese; 1 = 100% Canadian) in order to explore their attempts to settle in a new society.

## **3.3 Data Collection**

The participants were recruited by online invitation and snowball sampling. An invitation letter (see Appendix A) was posted on most Chinese immigrants' Web sites, supermarkets, and university cafeterias in the four aforementioned cities. The recruitment was accomplished within 6 months. Participants eligible to participate in this program were given a consent letter (see Appendix B) and a sample questionnaire via email so that they could make a decision to continue

to participate in the program or not. Upon their approval, they were given an informed consent form to sign in order to give permission to use their information in this study. Then they were asked to complete a quantitative questionnaire (see Appendix C). As described above, they were asked to provide their personal information (age, gender, immigration time, job, employment, income, family information, height, and weight) and attitudes and practices (diet, oral health, psychological health, acculturation level, personal preferences). The questionnaire included some questions about Berry's acculturation mode that could be complicated to participants, so the interviewer provided an explanation to help them understand when they felt unsure. The quantitative questionnaire was designed in both simple Chinese and English.

### **3.4 Data Analysis**

Data analysis program SPSS (version 16.0; SPSS Inc, 2008) was used to process and analyze the data. The data analysis was designed in two stages: descriptive and correlational analysis. Descriptive statistics were used to profile the big picture of the Chinese participants' demographic characteristics, beliefs, and practices on diet, oral health, Fengshui, health-related habits, psychological health, social relation of health, sexual health, TCM, knowledge about health-care and health-promotion system, self-identity, and acculturation status. The variables desired to represent the above issues were processed by frequency analysis, because most of the variables in this study were ordinal. Both median and mean were considered. Based on the frequency table, the scale with no sample felt in were either combined with the scales besides or deleted. All measures of stress levels were added together to create a "Total Stress Level". This analysis was not only to reflect the numbers and percentages, instead, the main function for this study was to show what were the attitudes and practices that most participants had.

In correlational analysis, this study was expected to frame Chinese-Canadians' perspectives on health by structure the relations among their attitudes between each health aspects. Correlational analysis was used to explore the possible relations between each attitudinal variable and each measurement of health beliefs and practices. Because most variables were measured on ordinal scales with a non-random and unknown distribution of the population, spearman correlation coefficient and Chi-square were used to explore the correlations. Chi-square was only used on dichotomous variables. Because level of significance was the primary concern and trend was the only aim to use multivariate test, even though the variables did not meet the assumption, it was used to exclude the effects from confounders between each pair of significant related variables from spearman and Chi-square. Also acculturation was explored through correlational analysis, in order to reflect whether their beliefs would be changed by cross-cultural interactions.

### **3.5 Ethical Considerations**

This research was reviewed and received ethics clearance from the Brock University Research Ethics Board. The purpose of this study is to benefit the entire Chinese-Canadian community and each participant. In the process of recruitment, the interviewer used mass media popular in Chinese communities in four cities to distribute the invitation letter (e.g., posting the invitation letter in Chinese associations). To ensure that potential participants would not feel coerced to participate, all participants were informed of their rights in full detail during the initial contact; emphasizing that the participation is voluntary and they can withdraw at any time without any consequences. In addition, the interviewer emailed them politely in the back-and-forth conversations with each participant. If they intended to participate in this project, the interviewer would make an appointment with them as conveniently as possible. Before each

interview, the interviewer offered a consent form to the participants and strongly recommended that participants take time to read it. A brief introduction of the participants' rights and duties and interview context was provided again before each interview. According to each participant's preference, either the English or Chinese versions of the consent form and questionnaire were provided to ensure full understanding of their rights and duties. Each participant was free to choose to speak in Cantonese, Mandarin, or English during the conversation so that they could express their opinions and concerns clearly. In total, nearly 90 % of the participants used Mandarin; approximately 8 % of the participants used English and Cantonese; about 2 % of the participants used Cantonese most time.

In order to protect confidentiality, a code has been assigned to each participant during the study, and only the Principal Investigator can access the code system so that no participants' identification will be disclosed. In addition, all data collected during this study will be stored in a locked cabinet in the Principal Investigator's office. Data will be kept for 5 years after the time of completion of the study. Then, all data will be disposed of by such methods as shredding data papers and deleting data stored in computer files. Access to this coded data will be restricted to the people not belong to the project team.

## CHAPTER FOUR: RESULTS

This chapter presents the results of the study; they will be sequenced according to the research questions listed in Chapter One. After correcting any writing errors made by the participants and interviewer, the researcher double checked entry errors for accuracy to make sure the reliability of this study. Although the data were analyzed as nonparametric, age, gender, and origin distributions of the sample were comparable to those within the Chinese community in Canada in order to make the sample having better generalizability.

### 4.1 Overview

Tables 4 to 12 show the results from the descriptive analysis and display the variable distributions. The attitudes and practices about each health-related belief are displayed in Tables 13 to 23. In addition, the correlations among and between attitudes and practices to each health belief were explored and are presented in Tables 24 to 34. The outcomes from multivariate test are displayed in Table 35 to 38.

#### *4.1.1 Demographic Outcomes*

The total number of respondents in this study was 124. However, based upon the sampling frame, 100 individuals were chosen as the final participants and were distributed as follows: 11 from St. Catharines, 40 from Toronto, 35 from Vancouver, and 14 from Halifax. The distribution between males and females was slightly different, which was the same as the gender distribution in the Chinese-Canadian population (see Table 4). The age distribution was 52:36:7 in the three age groups (25-44; 45-64; 65 and older). The number of elderly persons in this sample was less than half of the number intended based upon the sampling frame (7:15). In contrast, the numbers of the other two age groups were almost the same as expected. Additionally, the ratio of the people from Mainland China, Hong Kong, and Taiwan is 63:27:10



in the Chinese-Canadian population (Statistics Canada, 2001). The ratio in this sample was 68:23:9, which was considered similar to the population (see Table 4).

Data related to the participants' highest education level, jobs before immigration, current job situation, income, citizenship, and marital status is displayed in Tables 5 to 7. Their highest educational levels were unevenly distributed, in that most participants were highly educated; information technology, education, and nursing or medical-related domains were the respondents' top three majors, with a particularly high ratio of participants working in education. More than half of the participants reported having a full-time job, while the number of retirees was greater than the number of persons who had a part-time job. The median family gross income was \$40,000 to \$60,000 per year. More than 70 % of participants had already been married or had a spouse. Fifty-six percent of the participants already had Canadian citizenship.

#### *4.1.2 Health Related Descriptive Outcomes*

Data related to insurance and health benefits, family doctors, health and fitness status, and medical history are displayed in Table 8. More than half the participants reported they and their family members had health insurance and benefits, but only about 20% of participants had their TCM expenses covered. A high percentage of the participants had a family doctor; more than half of the participants had a dentist; fewer than 30% reported having an Obstetrics-Gynaecology (OBGYN) practitioner or optometrist; and even fewer participants reported having a paediatrician.

In addition, information related to participants' height and weight were collected in the questionnaire in order to determine their BMI (see Tables 9 and 10). Their mean BMI was 23.4. Approximately 6% of the participants were considered underweight; nearly 67% participants were normal weight; and approximately 23 % participants were overweight. Almost 5 % of the

participants were obese, but only a few people reported they had any medical history (25.5%). Their total stress level ranged from 2 to 21, with a mean of 10.54. None of the participants' self-evaluated general health levels (SEGHLs) fell in the lowest level, which were transformed the correlation and regression analysis into four scales instead of five (SEGHLs are displayed in Table 11) No people reported that they had poor health. The most common health conditions for this sample were very good (50%) and good (34%), respectively.

Overall, most of the participants had annual health check-ups (68%). Only a very small percentage of participants were smokers (5%). Most participants used alcohol in a limited manner, including 18% who never drank alcohol. Most participants brushed their teeth twice per day (79.4%), but the use of dental floss was not consistent among those participants (see Table 12). Traditional Chinese Medicine was not frequently used by the participants; only 20 % of the participants reported they used TCM often or more frequently in Canada (see Table 13). Most participants never went to see a TCM physician in Canada (46.4%). Fewer than 10 % of the participants reported they had seen a TCM physician often or more frequently (7.3%).

#### **4.2 Attitudes and Practices Towards Each Aspect of Health**

The participants had very positive perceptions toward each health aspect, especially the psychological aspect. The health aspects included in the questionnaire were reported as being important for good health. Even though some participants still kept their original habits and beliefs, their perspectives on these health aspects were aligned with the western perspective. In the process of analysis, some health aspects had no frequency in some values, which had to be transformed into new variables.

#### *4.2.1 Chinese Diet*

There were five variables involved in this aspect, whose descriptive parameters are displayed in Table 14. Only 3 people thought a Chinese diet is not important for their health, while most participants believed that a Chinese diet was important or even very important for their health. The situation was the same for beliefs about having meals on time: 84 % of the participants reported it was important or very important to have meals on time. A significantly high percentage of the participants reported frequently buying Chinese groceries and eating Chinese food. Only 5 of the participants had a Chinese meal once a week or fewer and only 3 had one Chinese meal every few days. Most of the participants were very attached to Chinese meals and groceries. Most participants reported having junk food or western fast food biweekly, monthly, or fewer than once a month.

#### *4.2.2 Cultural Beliefs on Health*

Three variables were involved in this aspect (see Table 15). No participants believed that the location of the house would absolutely not affect people's health. Nearly half of the participants believed it had some impact on their health. "Fengshui" was obviously not believed by many participants (38%); however, nearly the same number of participants was still not sure about their attitude on Fengshui (37%). Alcohol belief was not directly related to health, but it could affect alcohol consumption. Nearly 40% of the participants thought alcohol culture is an important part of Chinese culture, but less than 30% of the sample disagreed.

#### *4.2.3 Oral Health*

Five variables were used to explore participants' beliefs and values on oral health (see Table 16). No participants offered extremely negative opinions on oral health and only 1 participant had a negative opinion. Most participants (73%) had regular dental check-ups at least

once a year; 60 % of the participants reported that they had dental cleanings at least twice per year. Most participants reported a habit of brushing their teeth twice a day (82%). However, there was no agreement on the use of dental floss in this sample—29% of participants never used it but 36.4% reported using it daily.

#### *4.2.4 Psychological Health*

The variables used to explore psychological aspects were a little more complicated than the other aspects. Not only their thoughts, but also their stress level and consultation possibility were included. Their thoughts about psychological health were extremely clear in that all the participants believed that psychological health is at least important for health. Most participants (92%) felt at least comfortable to talk about psychological health in general with other people. Even though not all participants thought they would seek medical help when they had psychological problems, more than half of them reported they maybe or absolutely would go to see a doctor. Their suggestions for their parents and children to go to see a psychiatrist were more positive than for themselves that rare participants would like to provide very negative suggestions for their parents and children either (see Table 17).

More than half of the participants were no longer students who felt school-related stress, so more than 50% of the participants reported no school-related stress whatsoever. However, their stress level from their jobs was around the median (as Neutral). The retired participants largely comprised the group with the lowest stress level from their jobs. Stress levels related to finance and family were similar, which most participants reported around the median (neutral and stressful). The distributions of stress level of language and cultural conflicts were even, compared to the others (see Table 18).

#### *4.2.5 Social Relations and Sexual Health*

Attitudes toward social health was made very clear in this sample with no participants reporting negative attitudes toward the social aspect of health, and most of them identifying the aspect as important or more (81.8%). Almost half of the participants preferred making friends with Chinese, but nearly half also reported no preference on making friends. Sexual health was believed to be important by 72% of the participants. More than half the participants felt comfortable talking about sexual health. Only 8 participants felt uncomfortable talking about sexual health (see Table 19). The distribution of attitudes to sexual health was slightly different in males and females; more males than females reported “very important” (see Table 20). The distribution of being comfortable talking about sexual health was similar as the attitude to sexual health; more males reported than females reported being very comfortable (see Table 21).

#### *4.2.6 Health-System Related Variables*

Participants’ knowledge about health-care and health-promotion systems is displayed in Table 22. Most people in this research knew a part of both health-care and health-promotion systems. In contrast, participants knew more about health-care systems than health-promotion systems. Otherwise, the participants had different preferences about their personal dentist and family doctor. Approximately half of the participants preferred a family physician and dentist with Chinese heritage. Participants showed a notable preference in their family physician’s cultural background, which was different than with their dentists, if they could not get a dentist with Chinese heritage, they would use any other dentist.

#### *4.2.7 Acculturation*

Acculturation was reported and reflected by three variables in this research, as displayed in Table 23. Eighty percent of the participants thought they were either completely Chinese or

mostly Chinese. Few participants thought they were more Canadian than Chinese. More than 90% of the participants evaluated themselves as integration (rather than assimilation, marginalization, or isolation) in the acculturation mode (Berry, 1997), which was the same situation in the Chinese community. Most participants reported their friends or members of Chinese community were in an integration level.

### **4.3 Correlations Within Each Health Aspect**

The correlations in this study are important, as they comprise the main structure of the perspectives. Therefore, the correlations among/between each health aspect are displayed in the Tables 24 to 34. Although this questionnaire only involved self-reported practice and health condition questions, its significance is due to the main structure of the final health perspective. Spearman's rank correlation coefficient was calculated to preinvestigate whether the variables were related to each other. Chi-square testing was used to check the relations when there was a dichotomous variable involved. The tables displayed the relations significantly from both Chi-square testing and Spearman correlation. Multivariate testing was used to test these significant relations again with possible interaction control.

#### *4.3.1 Chinese diet*

The correlations about the dietary aspect are listed in Table 24. There was a positive relationship between their attitude to Chinese diet toward health and how often they go to Chinese stores for groceries ( $r_s=0.322$ ,  $P=0.001$ ). The city in which the participants were living influenced their practices on purchasing Chinese groceries ( $\text{Chi}=35.6$ ,  $P=0.001$ ) and having Chinese meals ( $\text{Chi}=28.9$ ,  $P=0.001$ ), which both related to each other ( $r_s=0.393$ ,  $P<0.001$ ). Otherwise, how often they had junk food was not related to their meal practice, grocery practice, their attitudes to Chinese diet, or their attitude towards having regular meals on time. Also, the

longer they had stayed in Canada, the less positive attitude they had toward Chinese diets linked to health ( $r_s=-0.244$ ,  $P=0.014$ ). However, the single participants showed significant higher exposure to junk food than those who were married ( $r_s=-0.229$ ,  $P=0.026$ ).

After split the data by residency, practices related to groceries and meal were strongly related to their attitude to Chinese diet only within participants from St. Catharines. The relation between their practice on grocery and attitude was still found within people from Halifax, but not the relation between their practice on meal and attitude. These two relations were found neither within participants from Vancouver or Toronto (see Table 25).

#### *4.3.2 Cultural Beliefs on Health*

Their attitude towards house location and Fengshui were associated with each other ( $r_s=0.285$ ,  $P=0.004$ ). Housing attitude was negatively influenced by age and number of children in family, positively influenced by attitude to Chinese diet, but these relationships were not statistically significant. In contrast, attitude to Fengshui had a positive significant association ( $r_s=0.237$ ,  $P=0.017$ ) with attitude to Chinese diet (see Table 26).

Although most participants were not smokers, the smoker group was mostly male. The correlation was tested only in male group. Only their SEG<sub>N</sub>L was found related to smoking in males (Chi-square= 13.04,  $P=0.005$ ). Additionally, the longer the participants had stayed in Canada, the less they believed about alcohol culture in Chinese tradition ( $r_s=-0.333$ ,  $P=0.001$ ). Also, the attitudes to alcohol culture and Chinese diet were significantly related ( $r_s=-0.234$ ,  $P=0.019$ ). Their drinking incidence was negative but not significantly associated with smoking and belief about alcohol culture. The participants' drinking was related to their housing attitude ( $r_s=0.229$ ,  $P=0.022$ ). Because smokers were males, the stress of finance was related to smoking in male participants (Chi=20.16,  $P<0.001$ ) (see Table 27).

The more frequently participants used TCM, the more frequently they went to see TCM physician ( $r_s=0.444$ ,  $P<0.001$ ), the more they would like a family physician ( $\text{Chi}=33.09$ ,  $P=0.007$ ) with Chinese background. Then participants saw TCM physician frequently would like dentist ( $\text{Chi}=33.44$ ,  $P=0.005$ ) with Chinese background but not for family physician and who concerned more about their oral health ( $r_s=0.249$ ,  $P=0.012$ ). Participants who would like their family physicians with Chinese background would like their dentists with Chinese background as well ( $\text{Chi}=168.07$ ,  $P<0.001$ ) (see Table 28).

#### *4.3.3 Oral Health Belief*

Although distribution of the habit of brushing teeth was largely centralized on twice a day, it was significantly positive associated with people's attitude to oral health ( $r_s=0.278$ ,  $P=0.005$ ). The relation between people's attitude to oral health and their reported practice on dental cleaning ( $\text{Chi}=8.87$ ,  $P=0.031$ ) was significant positive but not on dental check-up. However, people who reported having at least twice a year dental cleaning were more likely to have at least once dental regular check-up ( $\text{Chi}=42.62$ ,  $P<0.001$ ) and use dental flossing frequently ( $\text{Chi}=10.73$ ,  $P=0.003$ ). The correlation between attitude to oral health and flossing frequency was positive but not significant. Female participants were more active on dental check-ups ( $\text{Chi}=7.88$ ,  $P=0.007$ ) and using floss ( $\text{Chi}=19.65$ ,  $P=0.001$ ) that they had much positive belief on oral health ( $r_s=0.243$ ,  $P=0.015$ ). Whether the participants had health benefits and/or insurance was significantly positively related to their reported practices on dental check-up ( $\text{Chi}=14.21$ ,  $P<0.001$ ), cleaning ( $\text{Chi}=14.06$ ,  $P<0.001$ ), teeth brushing ( $r_s=0.215$ ,  $P=0.032$ ), and using dental floss ( $r_s=0.206$ ,  $P=0.041$ ).

Meanwhile, the annual family income positively affected the participants' yearly frequency of dental cleaning ( $\text{Chi}=16.07$ ,  $P=0.007$ ) and check-up ( $\text{Chi}=17.78$ ,  $P=0.003$ ) as well



as the frequency of using dental floss ( $r_s=0.323$ ,  $P=0.002$ ). Family doctor, dentist, and citizenship were positively related to their dental check-up and cleaning, but just dentist and citizenship affected using dental floss (see Table 29).

#### 4.3.4 Psychological Beliefs

Because the attitude to psychological health was mostly positive, the significance of correlation coefficient only reflected the level of positive attitude. In this case, the attitude to psychological health was connected to the participants' attitude to oral health ( $r_s=0.407$ ,  $P<0.001$ ), how comfortable they felt about talking about psychological health ( $r_s=0.271$ ,  $P=0.006$ ), and their suggestion to their parents to seek psychological consultation ( $r_s=0.209$ ,  $P=0.043$ ). Their oral health attitude affected their comfortable feeling on talking psychology ( $r_s=0.280$ ,  $P=0.005$ ) and giving consultation advice to their parents ( $r_s=0.260$ ,  $P=0.011$ ) and children ( $r_s=0.356$ ,  $P<0.001$ ). The more likely they suggested their parents to see a psychiatrist, the more they would suggest their children ( $r_s=0.763$ ,  $P<0.001$ ), and the less they would have positive attitude to housing belief ( $r_s=-0.227$ ,  $P=0.027$ ). The choice people made about psychological consultation was related to their medical suggestions to their parent ( $r_s=0.680$ ,  $P<0.001$ ) and child ( $r_s=0.577$ ,  $P<0.001$ ). The more they felt comfortable to talk about their psychological problems with other people, the more positively they would act in looking for psychological consultation ( $r_s=0.253$ ,  $P=0.011$ ), suggesting psychological consultation to their parents ( $r_s=0.363$ ,  $P<0.001$ ) and their children ( $r_s=0.252$ ,  $P=0.013$ ). Females were more active on seeking psychological consultation than male ( $\text{Chi}=11.25$ ,  $P=0.024$ ) (see Table 30).

Moreover, their total stress level was not related to any of the five psychological variables. Age was not associated with any of the psychological variables, except total stress level ( $r_s=-0.420$ ,  $P<0.001$ ) that the younger the participants were the more stressful they felt.

Family income, using dental floss, and length of stay were found significantly related to their total stress level as well (see Table 31).

#### *4.3.5 Social Health and Sexual Health*

Attitude to sexual health was associated with drinking incidence ( $r_s=0.345$ ,  $P<0.001$ ), which was not significantly related to any of other attitudes included in this study. In addition, people felt more comfortable to talk about sexual health, the more positive attitude they would have to sexual health ( $r_s=0.239$ ,  $P=0.016$ ). The participants' attitude to social health was strongly related to their attitude to housing belief ( $r_s=0.344$ ,  $P<0.001$ ), which did not really influence what kind of friends they would like to make (see Table 32).

#### *4.3.6 Self Evaluated General Health Level (SEGHL)*

The self-evaluated health level was other important concerns in this research. According to spearman correlation coefficient, the correlations between self-evaluation health level and medical history ( $r_s=-0.238$ ,  $P=0.021$ ), smoking (Chi-square= 13.04,  $P=0.005$ ), their education level ( $r_s=0.318$ ,  $P=0.001$ ), attitude towards sexual health ( $r_s=0.318$ ,  $P=0.001$ ), comfort level of talking about sexual health ( $r_s=0.252$ ,  $P=0.011$ ), as well as total stress level ( $r_s=-0.250$ ,  $P=0.012$ ) were significant in this study (see Table 33).

#### *4.3.7 Acculturation*

Acculturation was one of the important issues in this research too. Participants' attitude to regular meals on time (Chi=34.04,  $P<0.001$ ), personal decisions about psychological consultation (Chi=24.09,  $P=0.019$ ), suggesting a psychological consultation for their parents (Chi=23.43,  $P=0.024$ ) and children (Chi=20.08,  $P=0.010$ ) about seeing psychiatrist, and preference on dentist (Chi=35.24,  $P<0.001$ ) had significant association with their acculturation level. Besides, their self-evaluation of identity was related to their attitude to Chinese diet

(Chi=24.31, P=0.018), how often they had Chinese meals (Chi=25.76, P=0.012), drinking (Chi=44.02, P<0.001), personal decisions about psychological consultation (Chi=30.38, P=0.016), suggesting a psychological consultation for their parents (Chi=27.21, P=0.039) and child (Chi=55.41, P<0.001), and attitude to sexual health (Chi=26.69, P=0.009). The longer they had stayed in Canada, the more they felt themselves as a Canadian (Chi=319.08, P<0.001) (see Table 34).

#### **4.4 Multivariate Test**

Based on the correlations from spearman correlation and Chi-square, the variables related to certain variables were associated with each other. Because interactions between these variables were not controlled in spearman correlation coefficient, in order to exclude the possible interactions, each significant correlation was tested by a multivariate test.

Age, length of residence in Canada, family income, eating meals on time, and dental flossing were found to be related to stress from spearman correlation. In order to exclude the effect from confounders, stress was adjusted for several variables. Based on the results from Table 35, stress and age were still related after adjusted for length of stay (P<0.001). Family income was still related to stress after adjusted age and length of stay (P=0.002). Employment was still related to stress as well after adjusted for age, length of stay, and income (P=0.023). The relation between stress and health level was close to significant (p=0.074) after adjusted employment, income, length of stay and age. After split the data by income, only significant spearman correlation was found in low income group (less than 2000) (Table 36). Sexual health was affected by SEGHL, drinking, comfort talking sexual health, and identity. After adjusted for drinking, comfort of talking about sexual health, and identity, SEGHL was no longer associated with their attitude to sexual health with p value equals to 0.102 (see Table 37).

In the self-evaluated general health level relations, because smoking was only found in males, the data was split by gender. In the male group, after adjusted their comfort of talking about sexual health, medical history and education, smoking was still found related to their self-evaluated general health level. However, based on the results, medical history and comfort of talking about sexual health were no longer related to SEGHL. In contrast, in female group, medical history was still relevant to SEGHL after adjusted for educational level and comfort of talking about sexual health. In the total participants, comfort of talking about sexual health was related to SEGHL after adjusted for smoking, education, and medical history (see Table 38).

#### **4.5 Summary of the Findings**

Most of their attitudes to the importance of Chinese diet to health, oral health, housing belief, psychological health, social relation, and sexual health were positive. They were very attached to Chinese diet in their practices. More than half of them were active in corresponding dental practices and would consider psychological consultation. The more they would consider psychological consultation, the more they would suggest their parents and children to seek psychological consultation. However, only one of their dietary practices and oral health practices were related to their attitudes respectively. Dentist and family doctor, health benefits, and family income had large impact on their dental practices. Their exposures on both TCM products and physicians were low. Neither TCM products nor visiting TCM physicians influenced their SEGHL or their attitudes to cultural beliefs.

Their identity was related to their attitude to Chinese diet, practice of having Chinese meals, drinking, seeking psychological consultation, suggesting parent(s) and child (ren) to see psychological consultation, attitude to sexual health, and length of stay in Canada. Their acculturation levels were mostly in integration and so was their community. Their decision on

psychological consultation, dental flossing, and meals on time were affected by acculturation level. Acculturation level was associated with going to seek psychological consultation, suggesting parent(s) and child (ren) to seeing psychological consultation, and attitude to regular meal on time.

Additionally, smoking, medical history, education level, and comfort talking about sexual health were associated with SEGHL. Age, length of stay, family income, meals on time, and dental flossing were related to stress, after controlling for possible interactions. In addition, after controlling for the interactions, the relations involved SEGHL were still significant. However, after split the data, comfort talking about sexual health was no longer related to SEGHL in neither of the gender, but smoking related to SEGHL in males and medical history related to SEGHL in females.

## **CHAPTER FIVE: DISCUSSION AND CONCLUSION**

Perspective is a multidimensional issue in that its relation net is normally too complicated to be illustrated clearly only by quantitative analysis. However, due to the special design of the questionnaire, the findings of this research made a number of contributions to the understanding of Chinese-Canadians' perspectives on health. The importance of this research is emphasized at the beginning of the discussion section. Possible explanations for inconsistent attitudes and practices and some interesting findings are discussed. In addition, applications of the findings include two aspects: theoretical aspect, which discusses acculturation theory and cultural interactions and practical aspect which provides advices for health education. The limitations of the research are discussed and recommendations for future research are included in future research section. Some of the expectations regarding the unsolved problems or unclear issues from the findings are recommended for the future research. An in-depth research with a larger sample size and participants from various generations and ages in each health aspect are strongly encouraged in future research.

### **5.1 Discussion**

The importance of studying Chinese-Canadians' perspectives on health comes from the differences in health matters among different ethnic groups. People from different ethnic backgrounds should be treated in different ways, especially when there are obvious conflicts between east and west cultures. Even though the findings were not enough to display a complete profile of Chinese-Canadians' perspectives on health, this research still provided some important information about their health perspectives. During the interview process, the questions offered the participants chances to think back and evaluate their health practices, attitudes, and status. This study was important not only because Chinese-Canadians are one of the largest ethnic

groups in Canada, nor because it could be used to tailor the health-care and health-promotion system and benefit the whole Chinese immigration, but also because it revealed the health practices and attitudes from a specific ethnic group to the world.

Culture is regarded as an integrated system of learned behaviour patterns that are characteristic of any given society (White, 2004). It relates to the way of people's life, including how they think, feel, and behave, which should not be ignored. Chinese-Canadians have their different perspectives (on health); so do other ethnic groups. In order to improve life quality for all ethnic groups in Canada, or in any other countries, it is important to attend to cultural perspectives. This study was just a beginning of that journey; it would benefit the whole society through understanding perspectives of different ethnic groups as well as sharing methods that are effective to maintain health and treat diseases.

Most of the survey questions looked at participants' attitudes towards cultural and scientific health beliefs. Dietary, alcohol, and Fengshui are the cultural-related beliefs and values. Oral health, psychological health, social relation, and sexual health are on the scientific side. The correlations and descriptive results presented in Chapter 4 helped to structure those perspectives by putting attitudes, practices, and SEGHL together. According to the findings, some noticeable points are discussed below. First, the relations involved SEGHL exposed some health related characteristics of the Chinese immigrants. Second, the different relations between grocery and meal practice and the participants' attitudes toward Chinese diet in different cities indicated that Chinese immigrants living in small cities were the better sample for studying their cultural beliefs and corresponding practices. Third, participants' attitudes toward cultural beliefs changed over time. Then, the relations among their acculturation level and identity were worth to discuss. Additionally, participants' attitudes towards psychological consultation, suggestions regarding

their parent(s) and child (ren) visit to psychiatrists, acculturation level, and identity were the other interesting finding in this study. In addition, their surprisingly positive/comfortable attitude toward sexual health was not consistent with tradition. Last, their low incidence of visiting and using TCM was unexpected as well.

#### *5.1.1 Self-Evaluated General Health Level*

Education was found related to SEGHL within both genders, which meant both male and female participants who had higher self-evaluation on their general health level had higher educational level. Maybe the higher the participants' educational levels were, the better health care and health prevention knowledge they had. Higher education may also have equipped them with better coping skills in their daily life.

The relationship between smoking and SEGHL was only found within male participants. The entire smoker group was five males; none of the female participants smoked. Due to the absence of female smokers, this study could only conclude that male participants' self-evaluation on their general health level was related to their smoking behaviour. In addition, the percentage of smoker in male was only 10 percent in this study, which was much less than that of China. The prevalence of smoking is high in China that more than 60 % of males are regular smoker (Gu, et al., 2004). Smoking is not only a personal preference for smokers in China; in most circumstances, cigarettes have a rather strong social significance (Mavrides, Hayes & Kuang, 2008). The change of those participants' smoking habits could relate to two environmental changes. On one hand, cigarettes no longer have the social function as it is in China, so that the respondents did not have to smoke if they preferred not to. On the other hand, perhaps nationwide comprehensive tobacco control policies have successfully reduced tobacco use in Canada (Greaves et al., 2006), even for the immigrants. Although immigrant assimilation is positively



related to tobacco use (Acevedo, 2000), within this smoker group, acculturation level did not have detectable impact on male participants' smoking behaviour. However, financial stress was associated with their more frequent smoking behaviour. Therefore, the antismoking campaign should focus on male Chinese immigrants with high financial stress.

Additionally, even though the total stress level of the participants was not related to their SEGHL, after controlling for their family income, correlation between stress level and SEGHL was still found in certain group based on their family income. The stress level of the participants declined over the length of their staying in Canada and the increase of their age. The most stressed group was the young and new arrivals; job related and financial stresses were the main source of their total stress. Stress was significantly related to SEGHL when the reported family income was less than CAD \$20,000. Therefore, unless their family income increased and stabilized, stress level was related to their self-evaluation on their general health level. Based upon this study, low income family members are the most important group for stress coping campaign. The participants' practices on using dental floss and their attitudes toward regular meal on time were related to their stress level; the more stressful the participants were, the less likely they had regular dining time. Therefore, the health promotion campaign should focus on the stress Chinese immigrants as well.

Medical history was another relevant variable in this research. The study found that the participants' history of having systemic diseases was related to SEGHL only in females. In the study, medical history was measured by a dichotomous variable. Either participants had severe disease or medical concern, they was marked one in this variable. In this case, medical history could significant affect female's self-evaluation on their general health level. The reason could

be that, compared to male participants, female participants considered more about their medical condition when they evaluated their general health status.

### *5.1.2 Chinese Diet*

In this research, most participants held the same dietary habits in accordance with their high incidence of grocery and meal intake practices, even though they did not have consistent attitude about how Chinese diet affects health. The relationship between grocery intake practices and the participants' attitudes toward dietary habits was found significant among participants from small cities (St. Catharines and Halifax). Due to the lack of accessibility of Chinese grocery stores in these two cities, only the participants who strongly believe in Chinese diet would make extra effort to purchase Chinese groceries and/or have Chinese meals. In this case, it would be more visible to see the influence of their attitude on their practices related to purchasing groceries and having meals. In contrast, in the two bigger cities (Vancouver and Toronto), Chinese groceries and restaurants were so convenient for the participants that they did not reflect on their attitudes; therefore, their attitudes did not influence their practices that related to purchasing Chinese groceries and having Chinese meals. Therefore in order to explore the relation between Chinese Canadians' attitude to Chinese diet and corresponding health practices, it is more appropriate to study the influence of Chinese beliefs through their practice on purchasing groceries and having meals in small city than a large one.

Meanwhile, the participants' attitudes toward the impact of Chinese diet on health were decreasing as the length of the participants' staying in Canada increase, even though the relation was not statistically strong. A recessive sensitivity to Chinese diet was expected. Previous research has found that younger, well-educated, and employed Chinese-Americans had no preference for traditional or western diets (Satia-Abouta, Patterson, Kristal, The, & Tu, 2002).

Even though education, age, and employment were not statistically detectable regarding their attitudes toward Chinese diet in this research, younger participants had more integrated dietary practices. They were exposed to junk food or fast food much more frequent than elderly. However, this dietary practice integration was not evidentially caused by attitude changes. Therefore, length of stay in Canada was important to their sensitive to Chinese diet. In further research, some in-depth questions about how Chinese diet could affect health in their opinions are recommended.

### *5.1.3 Traditional Beliefs*

Some other traditional beliefs had experienced the same condition change as Chinese diet did. Alcohol culture is part of the tradition in China especially for holidays and celebrations. Usually the closer people feel about one person, the more they would like to drink with him/her. It is an enjoyable time for Chinese to have dinner and drink with friends and relatives and have conversations to share joy (Hao, Young, & He, 1995). In addition, Alcohol is also commonly used as part of the business tradition to maintain good relations (Hao, Derson, Xiao, Li, & Zhang, 1999). This social drinking usually takes places with a meal as well. According to Chinese tradition, alcohol culture is related to Chinese diet. This traditional connection still remained within the participants because their attitudes toward Chinese diet and to alcohol culture were significantly related. However, the average alcohol consumption was low in the participants, with most of them drinking fewer than once a month. The reason could be that either their accessibility for alcohol was rare, or their habits and/or beliefs were changed. Apparently alcohol has becoming less important for them in their culture. Because their attitudes toward both Chinese diet and alcohol culture were disappearing over time and limited alcohol consumption,

their cultural beliefs, as the result, were quite possible to become recessive in the Chinese community in Canada.

Fengshui was another traditional belief that was being investigated in this study. Participants' attitudes toward Fengshui were inconsistent, which was much different from their belief toward housing. During the interviews, a large percentage of participants denied the healthy effect of "Fengshui" without thinking. In contrast, their attitudes to housing belief were much more positive. In fact, housing belief was just a part of Fengshui, which has scientific explanations. In China, Fengshui has been severely undermined for a long period of time, and considered as superstition since the early 20<sup>th</sup> century (Anaya, 1993). Because of the historical impact, Fengshui practices were officially forbidden in China, along with other feudal superstitions since 1949 (Zou, 1991). This was the reason we asked about their attitude about Fengshui twice in the questionnaire. As long as the participants can explain Fengshui phenomenon in a scientific way, they would keep believe in Fengshui. Otherwise, they just abandoned their old tradition or hid their true thoughts about it.

Chinese traditional thoughts on health were unique, until the Cultural/ Civilization Revolution (CR) in 1966. The ritual and cultural traditions have gradually disappeared since that time, especially in the metropolitan areas of Mainland China (Chappell, 2003). The CR not only destroyed mainland of China's economy, but largely shook, or even eradicated the loyalties and beliefs that the entire nation had about Chinese culture and tradition. Later on, the Chinese government worked hard to recuperate the loss, but some of the traditions just cannot be rebuilt. Additionally, after the CR, western approaches were spread over the country after open-up policies so that traditional cultures were shaken more severely. The majority of the participants are from Beijing, Guangdong, Shanghai, and Shenyang, all of which are international

metropolitan areas. Participants from these areas would have the most interactions with western perspectives even when they were in China. Therefore, their new traditional perspectives could make the findings from this research more understandable.

#### *5.1.4 Traditional Chinese Medicine*

The low incidence of visiting and using Traditional Chinese Medicine was the other unexpected findings from this research. Most participants have not been visiting TCM physicians or using TCM herbs in their immigration life frequently. Some of them mentioned in the interview that they no longer believed in TCM physicians and TCM herbs. The possible reasons might be their decreasing confidence in TCM physicians and herbal products, and lack of accessibility of the TCM products. As a prevalent medicine, TCM has been used for thousands of years and its values have been testified by Chinese history (Lake, 2004). However, western medicine's efficiency largely vibrated the TCM's status in Chinese people's minds (Tang, Zhang, & Wang, 2007). Additionally TCM was always unrecognized and attacked by the early western medicine, for instance, overdose of heavy metal (Siow, Gong, Au-Yeung, Woo, Choy & O, 2005). It affected people through their healthy literacy and health promotion campaigns until now. Only after some evidence-based results of efficiency of TCM were found, TCM was calling for resuscitation in China (Li, Jiang & Chen, 2008). The situation was getting better, but not enough in Canada. TCM physicians are allowed to give prescriptions only in BC (Lai & Chappell, 2006). Without an official reliability control system, it is hard to judge qualified TCM physicians from unqualified ones. The deficient confidence in TCM physicians might explain why no significant difference was found between people from Vancouver and other cities in this research.

The doubt that the participants had was not just for TCM physicians, but also for TCM products. Though evidence-based scientific research had reported benefits of using TCM herbs (Siow, Gong, Au-Yeung, Woo, Choy & O, 2005), the overdose of mercury and arsenic from the herbal treatment were still questioned by many people. Furthermore, even if there are some people who still believe in the efficiency of TCM herbal products, they had difficulties in accessing these products. The Natural Health Product Regulations came into effect on January 2004 that TCM herbal products had been tested to quantify to the market. The regular health insurance does not include TCM expense. As the result, the incidence of using TCM herbs and visiting TCM physician were low in this group of Chinese immigrants.

Apart from what was discussed above, the decreasing trust in TCM of Chinese is also influenced by the situation in China. The two medical systems have been coexisting for a period of time: the interactions between TCM and Western medicine already happened in both two kind of hospital and medical schools. The major courses in some Western medical school (Dalian Medical School, Inner Mongolia A.E. medical School, Qinghai University-department of medicine, and Guangdong Medical School) included one or two course to introduce TCM. In contrast, in some TCM medical school (Shanxi TCM School, Henan TCM School, Anhui TCM School, and Beijing University of TCM), students have both major and non-major courses related to western medicine. In hospitals, the two techniques had been combined to treat diseases. For example, the specialty of No.3 General Hospital of Beijing applied both systems in treating athletic trauma. In this environment, Chinese immigrants' attitudes toward TCM may not be the same as the old tradition.

### *5.1.5 Acculturation Level and Identity*

Ninety percent of participants had integration in their acculturation level, which means that most participants wanted to maintain their identity with home culture, but also wanted to take on some characteristics of the new culture. However, neither their preference for making friends or identity was not related to their acculturation level. Compared with their self-evaluated acculturation level, there was an inconsistency. Nearly 40 % of the participants still preferred making Chinese friends specifically; they did not have strong will to maintain their relationship with the larger society. In addition, 34 % of the participants, who were not willing to change their identity or characteristics yet, still thought they were completely Chinese. Different participants had different standard and opinion about the mode, it would be inappropriate to conclude the participants were maintaining their cultural values and adopting new values, based on the data from this study.

Although it was hard to say what acculturation level the participants were really at, the other results about acculturation level might provide a trend for this issue. The significant relation between their acculturation level and their attitudes toward psychological consultation indicated that their willingness to talk about private issues with others might be a factor to influence their evaluation on acculturation level. The more they felt that they integrated into the domestic society, the more likely they would like to try the psychological consultation without knowing the effectiveness, even though it is a humiliation in Chinese tradition. Also, the more they accepted it, the more they would like to recommend their parents and children to try it. It might show their willingness for their child (ren) and parent(s) to get involved in their integration. As for what made them willing to try psychological consultation, based on the findings from this study, education or length of stay in Canada, which assumed more contacts and interactions with

domestic groups, was not associated with it. Without any other information, this study could only conclude that their attitude towards seeking psychological consultation was more positive when they felt comfortable to talk about psychological health.

The participants' self-evaluated identity was other acculturation related variable in this study. The relations that involved identity were: Chinese diet, having Chinese meal, three variables for psychological consultation, sexual health and length of time. Based on the relation between identity and length of time, the participants felt that they were more and more like Canadians over length of their staying in Canada; however, time did not have the same effect on their citizenship. In addition, the more they thought they were Chinese, the more frequently they had Chinese meal, and the more they believed in the healthy effect of Chinese diet. Their attitudes toward psychological consultation was more negative when they thought they were more as a Chinese, which consisted with the traditional thoughts about talking private issues with strangers (Lin & Lin, 1981). Combined with the findings from acculturation, the main barrier for the participants seeking for psychological consultation could be the comfort level they feel. Therefore, the psychiatrist should notice about this when they meet their Chinese patients.

#### *5.1.6 Oral Health*

Although the effect of oral health to general health is not very much emphasized in China (Luan, Wang, & Cao, 1993; Tai, Zhou, Qian, & Yuan, 1992), most of the participant showed positive attitude towards oral health. Their habits of oral hygiene were even better than the tooth brushing habits of Chinese residents in China: twice dental cleaning a year and twice teeth brush per day, which were very prevalent in this group of participants. The new finding for this study was that the participants' attitude toward oral health was positively associated with their hygienic



practices. Therefore, their increasing cognition of oral health may improve their oral hygienic practices on dental cleaning and tooth brushing.

Immigrants are more likely to visit dentist than native-born (Newbold & Patel, 2006); nearly 60 percent of the participants had both dental check-up and dental cleaning and 78 percent of the participants had dental cleaning twice a year. Their health benefits, family income, dentist and/ or family doctor were positively related to both their dental cleaning and check-up, which are the similar factors that affected Canadians (Hyman, 2004). It seems that dentists and family doctors were important sources of their oral health literacy. The rate of using dental floss in the participants was not as prevalent as in Canadian, but the factors influenced their dental check-up and cleaning influenced their using dental flossing positively as well. Oral health is regarded as an important element that could influence general health in both physically and psychologically (WHO, 2005). Their total stress level was related to their use of dental floss, even after the effect of age, length of stay in Canada, health benefit, family income, and employment were excluded during the analysis. Combined the relation between stress level and attitudes toward regular meals on time, the more stressful they were, the less they may care or do daily health practices.

#### *5.1.7 Sexual Health*

Sex is a very sensitive issue in Chinese tradition. In the old days, sex related issues were embarrassed to be discussed in public (Evans, 1995). However, the participants' feelings about talking about sexual health were surprising comfortable and their attitudes toward the impact of sexual health on health were unexpected positive. Traditional Chinese perspective on sexual health was extremely conservative. Extras-marital affairs were portrayed as a derogatory lifestyle and pre-marital sex was construed as immoral (Farrer & Stewart, 2007). During the CR period, people had to be sexually well-behaved in order to advance in their careers (Su, 2007). However,

marital status, number of child at home, age, and gender was not found related to participants' attitudes to sexual health toward health and feeling about talking about sexual health in this research. Apparently, their attitudes toward sexual health were no long the same as the tradition. It could be because of the influence of acculturation. The more they considered themselves as a Canadian, the more positive/ comfortable attitude/feeling they had toward sexual health. However, this change should be considered not only for the exposure to the western culture, but also the transformations from contemporary China.

The Chinese sexual culture had tremendous and on-going changes in the last decade which is attributed to the "corrupt western values", especially after China's reform and opening-up policy (Farrer & Stewart, 2007). Information about sex and sexuality spread directly or indirectly through public media and education from school (Evans, 1995). In some famous universities, conferences about Chinese sexual culture provided opportunities for the sex researchers and their students to share ideas and exchange information. As the result, younger people had different sexual ideologies from the older generation, because they had more chances to study various human and social sciences (Sun, 2007). Besides, the entertainments such as pop songs, TV show, and radio programs helped to push aside the traditional sexual taboos and undermined the traditional norm of sexual practices (Gold, 1993). The moral values had declined obviously in younger generations. Especially after hooliganism was abolished as a crime in 1997, homosexuality, prostitution and mistress had become perceived problems which attracted governmental and social attention (Farrer & Stewart, 2007).

In addition, Chinese are concerned lot about self-image, and the participants tended to make themselves look well by giving the "right answer". For example, even though some female participants looked embarrassed when they were asked about "how comfortable do you feel to

talk about psychological health in general”, they still chose “comfortable”, with “very comfortable” as highest score 5 and “very uncomfortable” as the lowest score 1 (see appendix c). In contrast, some male participants even asked whether it was immoral to answer the question in certain way. Therefore, it was very likely that participants’ answers might not present their true feeling and thinking of sexual health in a face to face interview. Even though after the 90s, the sexual culture had changed a great deal, the differences between female and male were still there (Su, 2007). Based on the sensitivity of this issue, further interviewers would be guarded from their really thoughts and would not be easy.

## **5.2 Applications**

The applications for this study had two aspects: theoretical contributions and practical applications. The theoretical contributions were mainly related to Berry’s acculturation mode and the interactions between ethnic groups. The practical applications included four important applications on health prevention, education and literacy, based on the findings from this study.

### *5.2.1 Theoretical Contributions*

Berry’s acculturation mode was used as a framework for this study, however, the relations in this mode were not found. According to the experience of this research, although their identity was not related to their length of stay in Canada, their acculturation level, or their community’s acculturation level, or their thoughts on identity was consistent with their thoughts about making friends. It might indicate that identity and making friends was better to study about their acculturation level rather than their self-evaluated acculturation level. Also some of the participants mentioned that they are always Chinese in blood; only personal identity had been changed. Maybe due to the different philosophy that Chinese usually are more collectivists and the North Americans are more individualists (Wong, 2001), they still thought about their origin

when they identify themselves. In the future, cultural factors should be considered when designing the measurement of identity.

In addition, the acculturation phenomenon was revealed in this research. The longer they had stayed in Canada, the less they believed in the importance of Chinese diet to health and alcohol culture to Chinese culture, the more willing they were to use dental flossing, and the more they felt comfortable about talking to strangers about psychological health and sexual health. Their sensitivity of cultural discriminations was vanishing while they were assimilating into the domestic culture. In the changing process from ethnocentric to ethnorelative stages, their cultural beliefs were not firm as expected (White, 2004). Although many people are still attached to their cultural beliefs and cultural practices, the meaning of the practices and the loyalty to beliefs may no longer be the same. Based on Milton Bennett's intercultural sensitivity mode, the more cross-cultural interactions they had, the more their cultural beliefs would be shaken (Bennett & Hammer, 1998).

### *5.2.2 Practical Applications*

Four practical applications were found in this study. First, male participants with financial stress were more likely to be a regular smoker. Both of their smoking habit and stress level affected their self evaluation on general health level. In this case, they might have noticed that smoking and high stress were not good for their general health, but somehow they did not have the strength to change their unhealthy behaviours. Also, most stressful group was from young participants. Based on this finding, the anti-smoking campaign should focus on those young, new arrivals with financial concerns. Their strategy should not focus on the harm of smoking; instead they could provide some information and supports to help them through their hard time in the process of settlement. In addition, the immigration office should notice this

study results and provide new immigrants more employment related information and help them gain access to social support.

Participants with low educational level and income tend to give themselves low evaluation on general health. Also in low income group, high stress related to their low self-evaluation on general health. As a result, those low income family members with low education are the most important group for stress coping campaign. Participants' social status and their self-confidence level are usually related, which also explained why these people had low self-confidence. Therefore, health promotion designer should notice that health literacy about stress and mental health should be focus on; for example, some posters or flyer could be made to teach to target group about how to make them confident about themselves and some ways to enjoy life.

Third, not just psychiatrists but also other medical doctors should be aware that the comfortable feeling of the patients is the key, due to the cultural differences on seeking psychological consultation. Although this study did not explore much on medical consultation, it at least showed that ethnic groups might be more comfortable to be treated in a similar way as their tradition. It would be helpful to reduce their embarrassment, inconvenience, or dissatisfaction during their medical consultation visits. Otherwise, according to the relation between their psychological consultation and their acculturation level, psychiatrist could be effective access to deliver the coping skills and other health literacy.

This research was to encourage the doctors, nurses, caregivers, and social workers to be more cross-cultural awareness. Cross-cultural perspectives and practices, or even different health systems could be introduced in nursing schools or workshops. Based on the Canadian medical system, nurses should be trained with the awareness of cultural differences in different ethnic groups. The more they know about other cultures' beliefs, values, and practices, the more

medical help they could provide for patients from other cultural backgrounds. If nurses know more about how pregnancy was treated in Chinese tradition, they could at least provide some options, if they cannot make any changes. For instance, if Chinese pregnant women have to ingest some hot food or water, and the hospital only provides cold food, microwaves or hot pots should be accessible for the patients to heat their food or drink at their convenience.

### **5.3 Limitations and Future Research**

This study was conducted with first-generation Chinese immigrants, aged 25 and above, from four cities in Canada: Toronto, Vancouver, Halifax, and St. Catharines. The sampling methods had resulted in some limitations in this research. First, it is hard to generalize to the entire Chinese-Canadian population because of the sampling strategy. Although the population of Chinese-Canadian is the largest visible minority group in Canada (Statistics Canada 2005), there were few national surveys found aiming at Chinese-Canadians. Also comprehensive and large Chinese institution was rare. Due to these characteristics of the Chinese population, random sampling was hard to implement, so snowball sampling was used, which usually reflects a lack of generalizability. Although this sample represented certain characteristics of proportion to their prevalence in the population (age, gender, and origin), in order to make the sample representing as much as possible of the population, not all the characteristics were represented. For example, the average educational level in this sample was much higher than in Chinese population (Statistics Canada, 2001). As a result, the findings from this study may present more as Chinese-Canadian with higher educational level. Therefore, how much the Chinese immigrant population could be generalized from this sample was hard to know.

Moreover, even if temporarily ignored the limitation brought by sampling methods, the sample size may be the other limitation of this study. The sample size of this study was 100.

Even if it was randomly picked, the margin of error felt to 10%, which means if 60% of the participants reported the importance of Chinese diet; there would be a 95% probability that between 50 and 70% of the total population have the same opinion. It was not clear enough to predict the population. Additionally, number of participants from each city was not same. The errors in the two small cities were much larger than the two big cities. Therefore, the sample size dragged the generalizability of this study down as well. Therefore 72 % of Chinese immigrants lived in either Toronto or Vancouver (Statistics Canada, 2001), but findings from this study still cannot be confidently generalized to the population.

However, the findings still reflected some valuable information about the participants, which pointed out some possible further directions for the future researches. Nevertheless, there were still a few points should be paid attention to. First, age distribution of this sample was not exactly consistent with the distribution of Chinese-Canadian population. Not many participants were from the elderly group. The recruitment was processed by the acquisitions, Internet, and flyers, which may not be an effective way to recruit the elder Chinese-Canadians, especially those from Mainland China. Due to the language problem and unfamiliar environment, many elder had to have a company to go out, which made them usually stay at home (Lai, 2000). In contrast, the highest proportion age group was those who were between 25 and 40. The first level acquisitions were mostly from participants of youngest age group, who were more likely to have access to the Internet and flyers. People from this age group were active and easy to contact, which made them share the most sample population. The participants' attitudes towards health issues that were studied in this research may represent younger participants' thoughts more than those of the elderly. However, the elderly Chinese had high prevalence and incidence of mental problems (Lai, 2004a), which need to be explored more. Therefore, in the future research,

nursing homes or some other institutions that usually serve the Chinese elderly should be searched. Or it might be better to access elderly through their child (ren), who is (are) much easier to contact.

Second, the percentages (the number of participants in total Chinese-Canadian population of each city) were not equal, and even not close in the four cities. The Chinese cultural atmosphere was clearly different in the four cities. Accessibility to some facilities (groceries, cultural activities, and cultural related services) was limited in small cities: St. Catharines and Halifax. Participants were exposed frequently in dominant social values, which shifted their dietary practices in terms of purchasing groceries and choosing meals. Therefore, the outcome from this research might under-represent people from Toronto and Vancouver and over-represent people from St. Catharines and Halifax. Therefore, in the future research, a larger sample size could be chosen in cities like Toronto and Vancouver. Or, further studies could focus on Chinese-Canadians in cities of similar size and background at a time.

In addition, statistical limitations were unavoidable due to the quantitative nature of the research. The flexibility of the data was low. As part of nature of quantitative method, the questionnaire itself may have impeded much valuable information. Also, the research employed a cross-sectional analysis, which could broadly decrease the reliability as the research involved variables related to time. Therefore, a qualitative research is suggested in the future. According to the experience and findings from this study, further qualitative research should include questions about long-term health data (changing of health status or health practices), open questions about perspective on health, their health practice priority and their daily life, and observation of cultural differences.



In conclusion, the participants had realized that each health aspect (both traditional and scientific) was important to their health in the knowledgeable speaking; however, they acted differently most of the time in their life. Traditional thoughts about health were not significantly related to their perspectives on general health and became recessive by length of the participants' staying in Canada. Under high pressure, the priority of the daily health practices was declined. In low family income group, high stress was related to their low self evaluation of general health level. Although their acculturation level was mostly integration, their willingness of maintaining identity and relationships with larger society were not consistent with their acculturation level. However, psychological consultation was important and could be a good way to deliver health literacy. As a cross-sectional and cross-cultural research, there were a few unknown issues that in-depth further researches were expected.

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Table 1

*Berry's Mode of Acculturation 2005*

|                       |     | Cultural maintenance |                 |
|-----------------------|-----|----------------------|-----------------|
|                       |     | Yes                  | No              |
| Contact participation | Yes | Integration          | Assimilation    |
|                       | No  | Separation           | Marginalization |

Table 2

*Distribution of Chinese in Each City (Statistics Canada, 2001)*

| Residence City                | Immigration Origins |        |             |        |             |        | Total # of participants |
|-------------------------------|---------------------|--------|-------------|--------|-------------|--------|-------------------------|
|                               | Mainland China      |        | Hong Kong   |        | Taiwan      |        |                         |
|                               | Percentage*         | Number | Percentage* | Number | Percentage* | Number |                         |
| Toronto                       | 61.9%               | 25     | 33.4%       | 13     | 4.7%        | 2      | 40                      |
| Vancouver                     | 54%                 | 19     | 29.9%       | 10     | 16.1%       | 6      | 35                      |
| St. Catharines-Niagara Region | 78.2%               | 8      | 15.7%       | 2      | 6.1%        | 1      | 11                      |
| Halifax                       | 82.3%               | 11     | 12.5%       | 2      | 5.2%        | 1      | 14                      |
| Total                         | 63.8%**             | 63     | 27.3%**     | 27     | 8.9%**      | 10     | 100                     |

Note: \* Percentage of Chinese-Canadian population of each city.

\*\* Percentage of total number of participants.

Table 3

*Age Distribution of the Chinese Community (Statistics Canada 2001)*

| Age group   | Chinese community |                   |             |                   |                         |                   |
|-------------|-------------------|-------------------|-------------|-------------------|-------------------------|-------------------|
|             | Men               |                   | Women       |                   | Total in each age group |                   |
|             | Percentage*       | # of Participants | Percentage* | # of Participants | Percentage*             | # of Participants |
| 25 to 44    | 24.9%             | 25                | 26.5%       | 26                | 51.4%**                 | 51                |
| 45 to 64    | 16.7%             | 17                | 17.3%       | 17                | 34%**                   | 34                |
| 65 and over | 6.9%              | 7                 | 7.7%        | 8                 | 14.6%**                 | 15                |
| Total       | 48.5%             | 49                | 51.5%       | 51                | 100%                    | 100               |

Note: \* Percentage of Chinese-Canadian population of each gender.

\*\* Percentage of total number of participants.



Table 4

*Demographic Variables*

|           |                 | Frequency | Percent | Valid Percent | Cumulative Percent |
|-----------|-----------------|-----------|---------|---------------|--------------------|
| Residency | St.Catharines   | 11        | 11.0    | 11.0          | 11.0               |
|           | Halifax         | 14        | 14.0    | 14.0          | 25.0               |
|           | Vancouver       | 35        | 35.0    | 35.0          | 60.0               |
|           | Toronto         | 40        | 40.0    | 40.0          | 100.0              |
|           | Total           | 100       | 100.0   | 100.0         |                    |
| Gender    | Male            | 51        | 51.0    | 51.0          | 51.0               |
|           | Female          | 49        | 49.0    | 49.0          | 100.0              |
|           | Total           | 100       | 100.0   | 100.0         |                    |
| Age Group | 25-44 Years old | 52        | 52.0    | 54.7          | 54.7               |
|           | 45-64 Years old | 36        | 36.0    | 37.9          | 92.6               |
|           | 65 and older    | 7         | 7.0     | 7.4           | 100.0              |
|           | Total           | 95        | 95.0    | 100.0         |                    |
| Missing   | System          | 5         | 5.0     |               |                    |
| Origin    | Taiwan          | 9         | 9.0     | 9.0           | 9.0                |
|           | Hong Kong       | 23        | 23.0    | 23.0          | 32.0               |
|           | Mainland China  | 68        | 68.0    | 68.0          | 100.0              |
|           | Total           | 100       | 100.0   | 100.0         |                    |

Table 5

*Highest Educational Level*

| Highest educational level |                        | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------------------------|------------------------|-----------|---------|---------------|--------------------|
| Valid                     | Lower than high school | 2         | 2.0     | 2.0           | 2.0                |
|                           | High school            | 5         | 5.0     | 5.1           | 7.1                |
|                           | Diploma                | 18        | 18.0    | 18.2          | 25.3               |
|                           | Bachelor               | 35        | 35.0    | 35.4          | 60.6               |
|                           | Master                 | 25        | 25.0    | 25.3          | 85.9               |
|                           | Doctor/P.H.D.          | 14        | 14.0    | 14.1          | 100.0              |
|                           | Total                  | 99        | 99.0    | 100.0         |                    |
| Missing                   | System                 | 1         | 1.0     |               |                    |

Table 6

*Job Before and After Immigration*

|                      | Frequency |         | Percent |         | Valid Percent |         | Cumulative Percent |         |
|----------------------|-----------|---------|---------|---------|---------------|---------|--------------------|---------|
|                      | Before    | Current | Before  | Current | Before        | Current | Before             | Current |
| No Job               | 13        | 28      | 13.0    | 28.0    | 13.3          | 29.8    | 13.3               | 29.8    |
| Education            | 18        | 14      | 18.0    | 14.0    | 18.4          | 14.9    | 31.6               | 44.7    |
| Business             | 21        | 11      | 21.0    | 11.0    | 21.4          | 11.7    | 53.1               | 56.4    |
| Computer science     | 7         | 11      | 7.0     | 11.0    | 7.1           | 11.7    | 60.2               | 68.1    |
| Engineer             | 11        | 1       | 11.0    | 1.0     | 11.2          | 1.1     | 71.4               | 69.1    |
| Medical doctor/Nurse | 13        | 9       | 13.0    | 9.0     | 13.3          | 9.6     | 84.7               | 78.7    |
| Labor or service     | 2         | 13      | 2.0     | 13.0    | 2.0           | 13.8    | 86.7               | 92.6    |
| Media                | 2         | 1       | 2.0     | 1.0     | 2.0           | 1.1     | 88.8               | 93.6    |
| Officer              | 2         | 0       | 2.0     | 0       | 2.0           | 0       | 90.8               | 93.6    |
| Office work          | 7         | 3       | 7.0     | 3.0     | 7.1           | 3.2     | 98.0               | 96.8    |
| Athlete              | 1         | 0       | 1.0     | 0       | 1.0           | 0       | 99.0               | 96.8    |
| Pastor/Monk          | 1         | 3       | 1.0     | 3.0     | 1.0           | 3.2     | 100.0              | 100     |
| Total                | 98        | 94      | 98.0    | 94.0    | 100.0         | 100     |                    |         |
| Missing              | 2         | 6       | 2.0     | 6.0     |               |         |                    |         |

Table 7

*Demographic Variables*

|                               | Variables                   | Frequency | Valid Percent | Cumulative Percent | Percent |
|-------------------------------|-----------------------------|-----------|---------------|--------------------|---------|
|                               | <b>Employ status</b>        |           |               |                    |         |
|                               | Unemployed                  | 17        | 17.3          | 17.3               |         |
|                               | Part time work              | 57        | 58.2          | 75.5               |         |
|                               | Full time work              | 11        | 11.2          | 86.7               |         |
|                               | Retired                     | 13        | 13.3          | 100.0              |         |
|                               | Total                       | 98        | 100.0         |                    |         |
|                               | <b>Citizenship</b>          |           |               |                    |         |
|                               | Non-Canadian<br>Citizenship | 44        | 44.0          | 44.0               |         |
|                               | Canadian Citizenship        | 56        | 56.0          | 100.0              |         |
|                               | Total                       | 100       | 100           |                    |         |
|                               | <b>Marital Status</b>       |           |               |                    |         |
|                               | No spouse                   | 21        | 22.1          | 22.1               |         |
|                               | Married (have spouse)       | 74        | 77.9          | 100.0              |         |
|                               | Total                       | 95        | 100.0         |                    |         |
| Missing                       | System                      | 5         | 5             |                    |         |
| Annual family<br>gross income | Under 20,000                | 14        | 14.0          | 15.4               | 15.4    |
|                               | \$20,000 to \$ 40,000       | 17        | 17.0          | 18.7               | 34.1    |
|                               | \$40,000 to \$ 60,000       | 26        | 26.0          | 28.6               | 62.6    |
|                               | \$60,000 to \$ 80,000       | 11        | 11.0          | 12.1               | 74.7    |
|                               | \$80,000 to \$ 100,000      | 9         | 9.0           | 9.9                | 84.6    |
|                               | more than \$ 100,000        | 14        | 14.0          | 15.4               | 100.0   |
|                               | Total                       | 91        | 91.0          | 100.0              |         |
| Missing                       | System                      | 9         | 9.0           |                    |         |

Table 8

*Health Related Demographic Variables*

|                            |        | Frequency | Percent | Valid Percent | Cumulative Percent |
|----------------------------|--------|-----------|---------|---------------|--------------------|
| Health Benefits            | No     | 40        | 40.0    | 40.0          | 40.0               |
|                            | Yes    | 60        | 60.0    | 60.0          | 100.0              |
|                            | Total  | 100       | 100.0   | 100.0         |                    |
| Family Health Insurance    | No     | 31        | 31.0    |               |                    |
|                            | Yes    | 55        | 55.0    | 36.0          | 36.0               |
|                            | Total  | 86        | 86.0    | 64.0          | 100.0              |
| Missing                    | System | 14        | 14.0    | 100.0         |                    |
|                            |        | 100       | 100.0   |               |                    |
| Health insurance about TCM | No     | 68        | 68.0    | 75.6          | 75.6               |
|                            | Yes    | 22        | 22.0    | 24.4          | 100.0              |
|                            | Total  | 90        | 90.0    | 100.0         |                    |
| Missing                    | System | 10        | 10.0    |               |                    |
| Total                      |        | 100       | 100     |               |                    |
| Family Doctor              | No     | 11        | 11.0    | 11.0          | 11.0               |
|                            | Yes    | 89        | 89.0    | 89.0          | 100.0              |
|                            | Total  | 100       | 100.0   | 100.0         |                    |
| Dentist                    | No     | 43        | 43.0    | 43.0          | 43.0               |
|                            | Yes    | 57        | 57.0    | 57.0          | 100.0              |
|                            | Total  | 100       | 100.0   | 100.0         |                    |
| Medical History            | No     | 70        | 70.0    | 74.5          | 74.5               |
|                            | Yes    | 24        | 24.0    | 25.5          | 100.0              |
|                            | Total  | 94        | 94.0    | 100.0         |                    |
| Missing                    | System | 6         | 6.0     |               |                    |
| Total                      |        | 100       | 100.0   |               |                    |

Table 9

*Height, Weight, BMI & Stress*

|                | N   | Minimum | Maximum | Mean    | Std. Deviation |
|----------------|-----|---------|---------|---------|----------------|
| Current height | 99  | 1.26    | 1.90    | 1.6699  | .09645         |
| Current weight | 98  | 42.5    | 105.0   | 65.372  | 12.3516        |
| BMI            | 98  | 16.05   | 45.73   | 23.4006 | 3.97158        |
| Total stress   | 100 | 2       | 21      | 10.54   | 4.098          |

Table 10

*BMI Stages*

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|     |             | Frequency | Percent | Valid Percent | Cumulative Percent |
|-----|-------------|-----------|---------|---------------|--------------------|
| BMI | Underweight | 5         | 5.0     | 5.0           | 5.0                |
|     | Normal      | 65        | 65.0    | 65.0          | 70.0               |
|     | Overweight  | 22        | 22.0    | 22.0          | 92.0               |
|     | Obesity     | 8         | 8.0     | 8.0           | 100.0              |
|     | Total       | 100       | 100.0   | 100.0         |                    |

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Table 11

*Self-evaluate Health Level*

| Health    | Frequency |        |       | Percent |        |       | Cumulative Percent |        |       |
|-----------|-----------|--------|-------|---------|--------|-------|--------------------|--------|-------|
|           | Male      | Female | Total | Male    | Female | Total | Male               | Female | Total |
| Poor      | 0         | 0      | 0     | 0.0     | 0.0    | 0.0   | 0.0                | 0.0    | 0.0   |
| Fair      | 2         | 2      | 3     | 3.9     | 4.1    | 3.0   | 3.9                | 4.1    | 3.0   |
| Good      | 14        | 19     | 34    | 27.5    | 38.8   | 34.0  | 31.4               | 42.9   | 37.0  |
| Very good | 27        | 23     | 50    | 52.9    | 46.9   | 50.0  | 84.3               | 89.8   | 87.0  |
| Excellent | 8         | 5      | 13    | 15.7    | 10.2   | 13.0  | 100.0              | 100.0  | 100.0 |
| Total     |           | 100    |       |         | 100.0  |       |                    | 100.0  |       |



Table 12

*Smoke and Alcohol Consumption*

|          |                                    | Frequency | Percent | Valid Percent | Cumulative Percent |
|----------|------------------------------------|-----------|---------|---------------|--------------------|
| Alcohol  | Never                              | 20        | 20.0    | 20.0          | 20.0               |
|          | Once a month or a few times a week | 66        | 66.0    | 66.0          | 86.0               |
|          | Once a week                        | 4         | 4.0     | 4.0           | 90.0               |
|          | A few times in a week              | 7         | 7.0     | 7.0           | 97.0               |
|          | Daily                              | 3         | 3.0     | 3.0           | 100.0              |
|          | Total                              | 100       | 100.0   | 100.0         |                    |
| Smoke    | No                                 | 95        | 95.0    | 95.0          | 95.0               |
|          | Yes                                | 5 (male)  | 5.0     | 5.0           | 100.0              |
|          | Total                              | 100       | 100.0   | 100.0         |                    |
| Health   | No                                 | 31        | 31.0    | 31.0          | 31.0               |
| Check-up | Yes                                | 69        | 69.0    | 69.0          | 100.0              |
|          | Total                              | 100       | 100.0   | 100.0         |                    |

Table 13

*TCM Use and Visit*

|       |              | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|--------------|-----------|---------|---------------|--------------------|
| Use   | Never        | 18        | 18.0    | 18.0          | 18.0               |
|       | Occasionally | 36        | 36.0    | 36.0          | 54.0               |
|       | Sometimes    | 24        | 24.0    | 24.0          | 78.0               |
|       | Often        | 15        | 15.0    | 15.0          | 93.0               |
|       | Always       | 7         | 7.0     | 7.0           | 100.0              |
|       | Total        | 100       | 100.0   | 100.0         |                    |
| Visit | Never        | 49        | 49.0    | 49.0          | 49.0               |
|       | Occasionally | 23        | 23.0    | 23.0          | 72.0               |
|       | Sometimes    | 21        | 21.0    | 21.0          | 93.0               |
|       | Often        | 5         | 5.0     | 5.0           | 98.0               |
|       | Always       | 2         | 2.0     | 2.0           | 100.0              |
|       | Total        | 100       | 100.0   | 100.0         |                    |

Table 14

*Dietary Variables*

|               |                                | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------------|--------------------------------|-----------|---------|---------------|--------------------|
| Chinese       | Not important at all           | 1         | 1.0     | 1.0           | 1.0                |
| Diet          | Not important                  | 2         | 2.0     | 2.0           | 3.0                |
|               | Neutral                        | 26        | 26.0    | 26.0          | 29.0               |
|               | Important                      | 43        | 43.0    | 43.0          | 72.0               |
|               | Very important                 | 28        | 28.0    | 28.0          | 100.0              |
|               | Total                          | 100       | 100.0   | 100.0         |                    |
| Chinese       | Do not go at all               | 2         | 2.0     | 2.0           | 2.0                |
| Grocery       | Fewer than once a month        | 7         | 7.0     | 7.0           | 9.0                |
|               | Once a month                   | 4         | 4.0     | 4.0           | 13.0               |
|               | Twice a month                  | 9         | 9.0     | 9.0           | 22.0               |
|               | At least once a week           | 78        | 78.0    | 78.0          | 100.0              |
|               | Total                          | 100       | 100.0   | 100.0         |                    |
| Chinese       | Fewer than once a week         | 5         | 5.0     | 5.0           | 5.0                |
| Meal          | One meal per week              | 0         | 0.0     | 0.0           | 5.0                |
|               | One meal every a few days      | 3         | 3.0     | 3.0           | 8.0                |
|               | One meal in a day              | 23        | 23.0    | 23.0          | 31.0               |
|               | Every major meal or every meal | 69        | 69.0    | 69.0          | 100.0              |
|               | Total                          | 100       | 100.0   | 100.0         |                    |
| Junk/Fast     | Fewer than once a month        | 36        | 36.0    | 36.0          | 36.0               |
| Food          | Monthly                        | 25        | 25.0    | 25.0          | 61.0               |
|               | Biweekly                       | 14        | 14.0    | 14.0          | 75.0               |
|               | Weekly                         | 22        | 22.0    | 22.0          | 97.0               |
|               | Daily                          | 3         | 3.0     | 3.0           | 100.0              |
|               | Total                          | 100       | 100.0   | 100.0         |                    |
| Meals on time | Not important at all           | 1         | 1.0     | 1.0           | 1.0                |
|               | Not important                  | 6         | 6.0     | 6.0           | 7.0                |
|               | Neutral                        | 9         | 9.0     | 9.0           | 16.0               |
|               | Important                      | 30        | 30.0    | 30.0          | 46.0               |
|               | Very important                 | 54        | 54.0    | 54.0          | 100.0              |
|               | Total                          | 100       | 100.0   | 100.0         |                    |

Table 15

*Cultural Beliefs*

|                    |                       | Frequency | Percent | Valid Percent | Cumulative Percent |
|--------------------|-----------------------|-----------|---------|---------------|--------------------|
| Housing<br>Belief  | Do not believe at all | 0         | 0.0     | 0.0           | 0.0                |
|                    | Not believe           | 5         | 5.0     | 5.0           | 5.0                |
|                    | Neutral               | 26        | 26.0    | 26.0          | 31.0               |
|                    | Believe               | 48        | 48.0    | 48.0          | 79.0               |
|                    | Strongly believe      | 21        | 21.0    | 21.0          | 100.0              |
|                    | Total                 | 100       | 100.0   | 100.0         |                    |
| Fengshui<br>Belief | Do not believe at all | 10        | 10.0    | 10.0          | 10.0               |
|                    | Not believe           | 28        | 28.0    | 28.0          | 38.0               |
|                    | Neutral               | 37        | 37.0    | 37.0          | 75.0               |
|                    | Believe               | 16        | 16.0    | 16.0          | 91.0               |
|                    | Strongly believe      | 9         | 9.0     | 9.0           | 100.0              |
|                    | Total                 | 100       | 100.0   | 100.0         |                    |
| Alcohol<br>Belief  | Do not believe at all | 2         | 2.0     | 2.0           | 2.0                |
|                    | Not believe           | 25        | 25.0    | 25.0          | 27.0               |
|                    | Neutral               | 31        | 31.0    | 31.0          | 58.0               |
|                    | Believe               | 29        | 29.0    | 29.0          | 87.0               |
|                    | Strongly believe      | 13        | 13.0    | 13.0          | 100.0              |
|                    | Total                 | 100       | 100.0   | 100.0         |                    |

Table 16

*Oral Health Variables*

|                  |                       | Frequency | Percent | Valid Percent | Cumulative Percent |
|------------------|-----------------------|-----------|---------|---------------|--------------------|
| Oral Health      | Not important         | 1         | 1.0     | 1.0           | 1.0                |
|                  | Neutral               | 4         | 4.0     | 4.0           | 5.0                |
|                  | Important             | 34        | 34.0    | 34.0          | 39.0               |
|                  | Very important        | 61        | 61.0    | 61.0          | 100.0              |
|                  | Total                 | 100       | 100.0   | 100.0         |                    |
| Dental Check-up  | No                    | 27        | 27.0    | 27.0          | 27.0               |
|                  | Yes                   | 73        | 73.0    | 73.0          | 100.0              |
|                  | Total                 | 100       | 100.0   | 100.0         |                    |
| Dental Cleaning  | No                    | 40        | 40.0    | 40.0          | 40.0               |
|                  | Yes                   | 60        | 60.0    | 60.0          | 100.0              |
|                  | Total                 | 100       | 100.0   | 100.0         |                    |
| Brush Teeth      | Once a week           | 1         | 1.0     | 1.0           | 1.0                |
|                  | Once daily            | 10        | 10.0    | 10.0          | 11.0               |
|                  | Twice daily           | 82        | 82.0    | 82.0          | 93.0               |
|                  | After each meal       | 7         | 7.0     | 7.0           | 100.0              |
|                  | Total                 | 100       | 100.0   | 100.0         |                    |
| Use Dental Floss | Never                 | 29        | 29.0    | 29.3          | 29.3               |
|                  | Once a week           | 11        | 11.0    | 11.1          | 40.4               |
|                  | a few times in a week | 15        | 15.0    | 15.2          | 55.6               |
|                  | daily                 | 36        | 36.0    | 36.4          | 91.9               |
|                  | more than once a day  | 8         | 8.0     | 8.1           | 100.0              |
|                  | Total                 | 99        | 99.0    | 100.0         |                    |
| Missing          | System                | 1         | 1.0     |               |                    |
| Total            | 100                   | 100.0     |         |               |                    |

Table 17  
*Psychological Health Variables*

|  |                        | Frequency | Percent | Valid Percent | Cumulative Percent |
|--|------------------------|-----------|---------|---------------|--------------------|
| Psychological health                       | Not important (at all) | 0         | 0.0     | 0.0           | 0.0                |
|  | Neutral                | 2         | 2.0     | 2.0           | 2.0                |
|  | Important              | 21        | 21.0    | 21.0          | 23.0               |
|  | Very important         | 77        | 77.0    | 77.0          | 100.0              |
|  | Total                  | 100       | 100.0   | 100.0         |                    |
| Comfort talking about psychological Health | Very uncomfortable     | 0         | 0.0     | 0.0           | 0.0                |
|  | Uncomfortable          | 3         | 3.0     | 3.0           | 3.0                |
|  | Neutral                | 5         | 5.0     | 5.0           | 8.0                |
|  | Comfortable            | 50        | 50.0    | 50.0          | 58.0               |
|  | Very comfortable       | 42        | 42.0    | 42.0          | 100.0              |
|  | Total                  | 100       | 100.0   | 100.0         |                    |
| Self consultation                          | Absolutely not         | 5         | 5.0     | 5.0           | 5.0                |
|  | No                     | 19        | 19.0    | 19.0          | 24.0               |
|  | Do not know            | 16        | 16.0    | 16.0          | 40.0               |
|  | Maybe                  | 26        | 26.0    | 26.0          | 66.0               |
|  | Absolutely             | 34        | 34.0    | 34.0          | 100.0              |
|  | Total                  | 100       | 100.0   | 100.0         |                    |
| Suggestion to parents                      | Absolutely not         | 3         | 3.0     | 3.2           | 3.2                |
|  | No                     | 11        | 11.0    | 11.6          | 14.7               |
|  | Do not know            | 11        | 11.0    | 11.6          | 26.3               |
|  | Maybe                  | 34        | 34.0    | 35.8          | 62.1               |
|  | Absolutely             | 36        | 36.0    | 37.9          | 100.0              |
|  | Total                  | 95        | 95.0    | 100.0         |                    |
| Missing                                    | System                 | 5         | 5.0     |               |                    |
| Total                                      |                        | 100       | 100.0   |               |                    |
| Suggestion to child                        | Absolutely not         | 1         | 1.0     | 1.0           | 1.0                |
|  | No                     | 7         | 7.0     | 7.2           | 8.2                |
|  | Do not know            | 7         | 7.0     | 7.2           | 15.5               |
|  | Maybe                  | 34        | 34.0    | 35.1          | 50.5               |
|  | Absolutely             | 48        | 48.0    | 49.5          | 100.0              |
|  | Total                  | 97        | 97.0    | 100.0         |                    |
| Missing                                    | System                 | 3         | 3.0     |               |                    |
| Total                                      |                        | 100       | 100.0   |               |                    |

Table 18

*Stress Variables*

|          |                    | Frequency | Percent | Valid Percent | Cumulative Percent |
|----------|--------------------|-----------|---------|---------------|--------------------|
| Study    | no stress at all   | 52        | 52.0    | 52.0          | 52.0               |
|          | not very stressful | 6         | 6.0     | 6.0           | 58.0               |
|          | Neutral            | 20        | 20.0    | 20.0          | 78.0               |
|          | stressful          | 16        | 16.0    | 16.0          | 94.0               |
|          | Very stressful     | 6         | 6.0     | 6.0           | 100.0              |
|          | Total              | 100       | 100.0   | 100.0         |                    |
| Job      | no stress at all   | 20        | 20.0    | 20.0          | 20.0               |
|          | not very stressful | 9         | 9.0     | 9.0           | 29.0               |
|          | Neutral            | 28        | 28.0    | 28.0          | 57.0               |
|          | stressful          | 36        | 36.0    | 36.0          | 93.0               |
|          | Very stressful     | 7         | 7.0     | 7.0           | 100.0              |
|          | Total              | 100       | 100.0   | 100.0         |                    |
| Finance  | no stress at all   | 13        | 13.0    | 13.1          | 13.1               |
|          | not very stressful | 20        | 20.0    | 20.2          | 33.3               |
|          | Neutral            | 31        | 31.0    | 31.3          | 64.6               |
|          | stressful          | 31        | 31.0    | 31.3          | 96.0               |
|          | Very stressful     | 4         | 4.0     | 4.0           | 100.0              |
|          | Total              | 99        | 99.0    | 100.0         |                    |
| Missing  | System             | 1         | 1.0     |               |                    |
| Total    |                    | 100       | 100.0   |               |                    |
| Family   | no stress at all   | 11        | 11.0    | 11.5          | 11.5               |
|          | not very stressful | 21        | 21.0    | 21.9          | 33.3               |
|          | Neutral            | 34        | 34.0    | 35.4          | 68.8               |
|          | stressful          | 27        | 27.0    | 28.1          | 96.9               |
|          | Very stressful     | 3         | 3.0     | 3.1           | 100.0              |
|          | Total              | 96        | 96.0    | 100.0         |                    |
| Missing  | System             | 4         | 4.0     |               |                    |
| Total    |                    | 100       | 100.0   |               |                    |
| Language | no stress at all   | 11        | 11.0    | 11.0          | 11.0               |
|          | not very stressful | 24        | 24.0    | 24.0          | 35.0               |
|          | Neutral            | 31        | 31.0    | 31.0          | 66.0               |

|           |                    |     |       |       |       |
|-----------|--------------------|-----|-------|-------|-------|
|           | stressful          | 25  | 25.0  | 25.0  | 91.0  |
|           | Very stressful     | 9   | 9.0   | 9.0   | 100.0 |
|           | Total              | 100 | 100.0 | 100.0 |       |
| Cultural  | no stress at all   | 11  | 11.0  | 11.2  | 11.2  |
| Conflicts | not very stressful | 33  | 33.0  | 33.7  | 44.9  |
|           | Neutral            | 33  | 33.0  | 33.7  | 78.6  |
|           | stressful          | 18  | 18.0  | 18.4  | 96.9  |
|           | Very stressful     | 3   | 3.0   | 3.1   | 100.0 |
|           | Total              | 98  | 98.0  | 100.0 |       |
| Missing   | System             | 2   | 2.0   |       |       |
| Total     |                    | 100 | 100.0 |       |       |



Table 19

*Social and Sexual Health Variables*

|                             |  | Frequency | Percent | Valid Percent | Cumulative Percent |
|-----------------------------|--|-----------|---------|---------------|--------------------|
| Social Belief               | Not important at all                               | 0         | 0.0     | 0.0           | 0.0                |
|                             | Not important                                      | 0         | 0.0     | 0.0           | 0.0                |
|                             | Neutral  | 18        | 18.0    | 18.2          | 18.2               |
|                             | Important  | 53        | 53.0    | 53.5          | 71.7               |
|                             | Very important                                     | 28        | 28.0    | 28.3          | 100.0              |
|                             | Total  | 99        | 99.0    | 100.0         |                    |
| Missing                     | System   | 1         | 1.0     |               |                    |
| Total                       |  | 100       | 100.0   |               |                    |
| Make Friends                | All kinds of friends                               | 56        | 56.0    | 56.0          | 56.0               |
|                             | Caucasian friends                                  | 3         | 3.0     | 3.0           | 59.0               |
|                             | Koreans and Japanese who share the similar culture | 1         | 1.0     | 1.0           | 60.0               |
|                             | Chinese  | 40        | 40.0    | 40.0          | 100.0              |
|                             | Total  | 100       | 100.0   | 100.0         |                    |
| Sexual                      | Not important at all                               | 0         | 0.0     | 0.0           | 0.0                |
| Health Belief               | Not important                                      | 4         | 4.0     | 4.0           | 4.0                |
|                             | Neutral  | 24        | 24.0    | 24.0          | 28.0               |
|                             | Important  | 57        | 57.0    | 57.0          | 85.0               |
|                             | Very important                                     | 15        | 15.0    | 15.0          | 100.0              |
|                             | Total  | 100       | 100.0   | 100.0         |                    |
| Comfort                     | Very uncomfortable                                 | 0         | 0.0     | 0.0           | 0.0                |
| Talking about Sexual Health | Uncomfortable                                      | 8         | 8.0     | 8.0           | 8.0                |
|                             | Neutral  | 29        | 29.0    | 29.0          | 37.0               |
|                             | Comfortable  | 54        | 54.0    | 54.0          | 91.0               |
|                             | Very comfortable                                   | 9         | 9.0     | 9.0           | 100.0              |
|                             | Total  | 100       | 100.0   | 100.0         |                    |

Table 20

*Distribution of Sexual Health in Each Gender*

|        |                | <b>how important is sexual health</b> |         |               |                    |
|--------|----------------|---------------------------------------|---------|---------------|--------------------|
| Gender |                | Frequency                             | Percent | Valid Percent | Cumulative Percent |
| male   | not important  | 2                                     | 3.9     | 3.9           | 3.9                |
|        | neutral        | 11                                    | 21.6    | 21.6          | 25.5               |
|        | important      | 28                                    | 54.9    | 54.9          | 80.4               |
|        | very important | 10                                    | 19.6    | 19.6          | 100.0              |
|        | Total          | 51                                    | 100.0   | 100.0         |                    |
| female | not important  | 2                                     | 4.1     | 4.1           | 4.1                |
|        | neutral        | 16                                    | 32.7    | 32.7          | 36.7               |
|        | important      | 27                                    | 55.1    | 55.1          | 91.8               |
|        | very important | 4                                     | 8.2     | 8.2           | 100.0              |
|        | Total          | 49                                    | 100.0   | 100.0         |                    |

Table 21

*Distribution of Comfort Talking about Sexual Health in Each Gender*

| <b>how comfortable do you feel to talk about sexual health</b> |       |                  |           |         |               |                    |
|--|-------|------------------|-----------|---------|---------------|--------------------|
| Gender   |       |                  | Frequency | Percent | Valid Percent | Cumulative Percent |
| male   | Valid | uncomfortable    | 2         | 3.9     | 3.9           | 3.9                |
|  |       | neutral          | 17        | 33.3    | 33.3          | 37.3               |
|  |       | comfortable      | 26        | 51.0    | 51.0          | 88.2               |
|  |       | very comfortable | 6         | 11.8    | 11.8          | 100.0              |
|  |       | Total            | 51        | 100.0   | 100.0         |                    |
| female   | Valid | uncomfortable    | 6         | 12.2    | 12.2          | 12.2               |
|  |       | neutral          | 13        | 26.5    | 26.5          | 38.8               |
|  |       | comfortable      | 27        | 55.1    | 55.1          | 93.9               |
|  |       | very comfortable | 3         | 6.1     | 6.1           | 100.0              |
|  |       | Total            | 49        | 100.0   | 100.0         |                    |

Table 22

*Health System Related Variables*

|   |   | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|-----------|---------|---------------|--------------------|
| Knowledge about Health Care System      | do not know at all                                | 1         | 1.0     | 1.0           | 1.0                |
|   | know very little                                  | 16        | 16.0    | 16.0          | 17.0               |
|   | know some   | 63        | 63.0    | 63.0          | 80.0               |
|   | know a lot  | 13        | 13.0    | 13.0          | 93.0               |
|   | know sufficiently                                 | 7         | 7.0     | 7.0           | 100.0              |
|   | Total   | 100       | 100.0   | 100.0         |                    |
| Knowledge about Health Promotion System | do not know at all                                | 11        | 11.0    | 11.0          | 11.0               |
|   | know very little                                  | 36        | 36.0    | 36.0          | 47.0               |
|   | know some   | 41        | 41.0    | 41.0          | 88.0               |
|   | know a lot  | 9         | 9.0     | 9.0           | 97.0               |
|   | know sufficiently                                 | 3         | 3.0     | 3.0           | 100.0              |
|   | Total   | 100       | 100.0   | 100.0         |                    |
| Physician                               | None  | 1         | 1.0     | 1.0           | 1.0                |
|   | Any family physician                              | 23        | 23.0    | 23.5          | 24.5               |
|   | Any family physician with cross-cultural training | 13        | 13.0    | 13.3          | 37.8               |
|   | Any family physician who knows Chinese medicine   | 6         | 6.0     | 6.1           | 43.9               |
|   | Family physician with Chinese heritage            | 55        | 55.0    | 56.1          | 100.0              |
|   | Total   | 98        | 98.0    | 100.0         |                    |
| Missing                                 | System  | 2         | 2.0     |               |                    |
| Total                                   |   | 100       | 100.0   |               |                    |
| Dentist                                 | None  | 3         | 3.0     | 3.1           | 3.1                |
|   | Any dentist                                       | 32        | 32.0    | 32.7          | 35.7               |
|   | Any dentist with cross-cultural training          | 13        | 13.0    | 13.3          | 49.0               |
|   | Any dentist who knows Chinese medicine            | 2         | 2.0     | 2.0           | 51.0               |
|   | Chinese dentist                                   | 48        | 48.0    | 49.0          | 100.0              |
|   | Total   | 98        | 98.0    | 100.0         |                    |
| Missing                                 | System  | 2         | 2.0     |               |                    |
| Total                                   |   | 100       | 100.0   |               |                    |

Table 23

*Acculturation Variables*

|                                    |  | Frequency | Percent | Valid Percent | Cumulative Percent |
|------------------------------------|--|-----------|---------|---------------|--------------------|
| Identity                           | 100% Canadian                                  | 1         | 1.0     | 1.0           | 1.0                |
|                                    | Mostly Canadian, some Chinese                  | 2         | 2.0     | 2.0           | 3.0                |
|                                    | Half Canadian and half Chinese                 | 17        | 17.0    | 17.0          | 20.0               |
|                                    | Mostly Chinese, some Canadian                  | 46        | 46.0    | 46.0          | 66.0               |
|                                    | Still 100% Chinese                             | 34        | 34.0    | 34.0          | 100.0              |
|                                    | Total  | 100       | 100.0   | 100.0         |                    |
| Self<br>Acculturation<br>Mode      | Separation                                     | 4         | 4.0     | 4.0           | 4.0                |
|                                    | Marginalization                                | 4         | 4.0     | 4.0           | 8.0                |
|                                    | Integration                                    | 91        | 91.0    | 91.0          | 99.0               |
|                                    | Assimilation                                   | 1         | 1.0     | 1.0           | 100.0              |
|                                    | Total  | 100       | 100.0   | 100.0         |                    |
| Community<br>Acculturation<br>Mode | Separation                                     | 4         | 4.0     | 4.0           | 4.0                |
|                                    | Marginalization                                | 17        | 17.0    | 17.0          | 21.0               |
|                                    | Integration                                    | 66        | 66.0    | 66.0          | 87.0               |
|                                    | Assimilation                                   | 1         | 1.0     | 1.0           | 88.0               |
|                                    | Hard to tell (depends on different individual) | 12        | 12.0    | 12.0          | 100.0              |
|                                    | Total  | 100       | 100.0   | 100.0         |                    |

Table 24

*Correlations Among Dietary Aspect*

|                   |             | Chinese<br>groceries | Chinese<br>meal | meals on<br>time | Canadian<br>residency | Length of<br>stay | Age            | Marriage      |
|-------------------|-------------|----------------------|-----------------|------------------|-----------------------|-------------------|----------------|---------------|
| Chinese diet      | Correlation |                      |                 |                  |                       |                   |                |               |
|                   | Coefficient | <b>.322**</b>        |                 |                  |                       | <b>-.244**</b>    |                |               |
|                   | Sig.        | <b>.001</b>          |                 |                  |                       | <b>.014</b>       |                |               |
| Chinese groceries | Correlation |                      |                 |                  |                       |                   |                |               |
|                   | Coefficient |                      | <b>.393**</b>   |                  | <b>35.6(Chi)</b>      |                   |                |               |
|                   | Sig.        |                      | <b>.000</b>     |                  | <b>.001</b>           |                   |                |               |
| Chinese meal      | Correlation |                      |                 |                  |                       |                   |                |               |
|                   | Coefficient |                      |                 | <b>-.199*</b>    | <b>28.9(Chi)</b>      |                   |                |               |
|                   | Sig.        |                      |                 | <b>.047</b>      | <b>.001</b>           |                   |                |               |
| Fast / junk food  | Correlation |                      |                 |                  |                       |                   |                |               |
|                   | Coefficient |                      |                 |                  |                       |                   | <b>-.300**</b> | <b>-.229*</b> |
|                   | Sig.        |                      |                 |                  |                       |                   | <b>.003</b>    | <b>.026</b>   |

Table 25

*Correlations After Split Data by Residency*

|                   |                         | Chinese diet   |               |           |         |
|-------------------|-------------------------|----------------|---------------|-----------|---------|
|                   |                         | St. Catharines | Halifax       | Vancouver | Toronto |
| Chinese groceries | Correlation Coefficient | <b>.830**</b>  | <b>.685**</b> | .119      | .179    |
|                   | Sig. (2-tailed)         | <b>.002</b>    | <b>.007</b>   | .497      | .269    |
|                   | N                       | 11             | 14            | 35        | 40      |
| Chinese meal      | Correlation Coefficient | <b>.747**</b>  | .325          | -.010     | -.155   |
|                   | Sig. (2-tailed)         | <b>.008</b>    | .258          | .956      | .339    |
|                   | N                       | 11             | 14            | 35        | 40      |

Table 26

*Correlations among Housing and Fengshui Aspect*

|                |                         | Fengshui                 | Chinese diet            | Age                      | Number of<br>child in family |
|----------------|-------------------------|--------------------------|-------------------------|--------------------------|------------------------------|
| Housing Belief | Correlation Coefficient | <b>.285<sup>**</sup></b> | .173                    | -.026                    | -.094                        |
|                | Sig.                    | <b>.004</b>              | .086                    | .801                     | .363                         |
| Fengshui       | Correlation Coefficient | 1.000                    | <b>.237<sup>*</sup></b> | <b>-.241<sup>*</sup></b> | <b>-.224<sup>*</sup></b>     |
|                | Sig.                    |                          | <b>.017</b>             | <b>.019</b>              | <b>.029</b>                  |





Table 28

*Correlations among Bioethics and TCM*

|                   |                         | Use TCM       | See TCM      | Family physician |
|-------------------|-------------------------|---------------|--------------|------------------|
| See TCM physician | Correlation Coefficient | <b>.444**</b> |              |                  |
|                   | Sig. (2-tailed)         | <b>.000</b>   |              |                  |
| Family physician  | Chi-square              | <b>33.09</b>  |              |                  |
|                   | Sig. (2-tailed)         | <b>.007</b>   |              |                  |
| Dentist           | Chi-square              |               | <b>33.44</b> | <b>168.07</b>    |
|                   | Sig. (2-tailed)         |               | <b>.005</b>  | <b>.000</b>      |
| Oral health       | Correlation Coefficient |               | <b>.249*</b> |                  |
|                   | Sig. (2-tailed)         |               | <b>.012</b>  |                  |

Table 29

*Correlations among Oral Aspect*

|                        |             | Dental<br>flossing | Dental<br>cleaning | Brushing<br>teeth | Gender            | family<br>income | Health<br>benefits | Education | Current<br>weight | Family<br>doctor | Dentist       | Citizen-<br>ship |
|------------------------|-------------|--------------------|--------------------|-------------------|-------------------|------------------|--------------------|-----------|-------------------|------------------|---------------|------------------|
| Oral<br>health         | Correlation |                    |                    |                   |                   |                  |                    |           |                   |                  |               |                  |
|                        | Coefficient |                    | <b>8.87(Chi)</b>   | <b>.278**</b>     | <b>.243*</b>      |                  |                    |           | <b>-.277**</b>    | <b>.226*</b>     |               |                  |
|                        | Sig.        |                    | <b>.031</b>        | <b>.005</b>       | <b>.015</b>       |                  |                    |           | <b>.006</b>       | <b>.024</b>      |               |                  |
| Dental<br>checkup      | Chi-square  |                    |                    | <b>7.88</b>       | <b>16.07</b>      | <b>14.21</b>     | <b>14.47</b>       |           |                   | <b>8.42</b>      | <b>37.11</b>  | <b>10.43</b>     |
|                        | Sig.        |                    |                    | <b>.007</b>       | <b>.007</b>       | <b>.000</b>      | <b>.013</b>        |           |                   | <b>.008</b>      | <b>.000</b>   | <b>.002</b>      |
| Dental<br>cleaning     | Chi-square  | <b>10.73</b>       |                    |                   | <b>17.68</b>      | <b>14.06</b>     |                    |           |                   | <b>9.00</b>      | <b>27.85</b>  | <b>14.94</b>     |
|                        | Sig.        | <b>.003</b>        |                    |                   | <b>.003</b>       | <b>.000</b>      |                    |           |                   | <b>.006</b>      | <b>.000</b>   | <b>.000</b>      |
| Brushing<br>teeth      | Correlation |                    |                    |                   |                   |                  |                    |           |                   |                  |               |                  |
|                        | Coefficient |                    |                    |                   |                   |                  | <b>.215*</b>       |           |                   | <b>.201*</b>     |               |                  |
|                        | Sig.        |                    |                    |                   |                   |                  | <b>.032</b>        |           |                   | <b>.045</b>      |               |                  |
| Use<br>dental<br>floss | Correlation |                    |                    |                   |                   |                  |                    |           |                   |                  |               |                  |
|                        | Coefficient |                    |                    |                   | <b>19.65(Chi)</b> | <b>.323**</b>    | <b>.206*</b>       |           | <b>-.334**</b>    |                  | <b>.328**</b> |                  |
|                        | Sig.        |                    |                    |                   | <b>.001</b>       | <b>.002</b>      | <b>.041</b>        |           | <b>.001</b>       |                  | <b>.001</b>   |                  |

Table 30

*Correlations among Psychological Aspect*

|   |                            | Comfort talking about<br>Psychological health | Suggest to<br>parent | Suggest to<br>child | Gender            | Oral<br>health | Meals on<br>time |
|---|----------------------------|---|----------------------|---------------------|-------------------|----------------|------------------|
| Psychological health                          | Correlation<br>Coefficient | <b>.271**</b>                                 |                      |                     |                   | <b>.407**</b>  | <b>.256*</b>     |
|   | Sig.                       | <b>.006</b>                                   |                      |                     |                   | <b>.000</b>    | <b>.010</b>      |
| Comfort talking about<br>psychological health | Correlation<br>Coefficient |   |                      |                     |                   | <b>.280**</b>  |                  |
|   | Sig.                       |   |                      |                     |                   | <b>.005</b>    |                  |
| Yourself                                      | Correlation<br>Coefficient | <b>.253*</b>                                  | <b>.680**</b>        | <b>.577**</b>       | <b>11.25(Chi)</b> |                | <b>.211*</b>     |
|   | Sig.                       | <b>.011</b>                                   | <b>.000</b>          | <b>.000</b>         | <b>.024</b>       |                | <b>.035</b>      |
| Suggest to parent                             | Correlation<br>Coefficient | <b>.363**</b>                                 |                      | <b>.763**</b>       |                   | <b>.260*</b>   | <b>.242*</b>     |
|   | Sig.                       | <b>.000</b>                                   |                      | <b>.000</b>         |                   | <b>.011</b>    | <b>.018</b>      |
| Suggest to child                              | Correlation<br>Coefficient | <b>.252*</b>                                  |                      |                     |                   | <b>.356**</b>  |                  |
|   | Sig.                       | <b>.013</b>                                   |                      |                     |                   | <b>.000</b>    |                  |

Table 31

*Correlations about Stress*

|        |                         | Age           | Length of stay | Family income  | Dental flossing |
|--------|-------------------------|---------------|----------------|----------------|-----------------|
| Stress | Correlation Coefficient | <b>-.232*</b> | <b>-.420**</b> | <b>-.315**</b> | <b>-.231*</b>   |
|        | Sig.                    | <b>.020</b>   | <b>.000</b>    | <b>.002</b>    | <b>.022</b>     |

Table 32

*Correlations among Social Health and Sexual Health*

|   |                         | social aspects of<br>health | Sexual health | how comfortable do you<br>feel to talk about it |
|---|-------------------------|-----------------------------|---------------|---|
| how comfortable do you feel to<br>talk about it | Correlation Coefficient |                             | <b>.239*</b>  |   |
|   | Sig. (2-tailed)         |                             | <b>.016</b>   |   |
| Housing belief                                  | Correlation Coefficient | <b>.344**</b>               |               |   |
|   | Sig. (2-tailed)         | <b>.000</b>                 |               |   |
| Length of stay                                  | Correlation Coefficient |                             |               | <b>-.282</b>                                    |
|   | Sig. (2-tailed)         |                             |               | <b>.005</b>                                     |
| Drinking alcohol                                | Correlation Coefficient |                             | <b>.345**</b> |   |
|   | Sig. (2-tailed)         |                             | <b>.000</b>   |   |

Table 33

*Correlations among Self-Evaluation Health*

|  |                         | in general, would you say your level of health |
|--|-------------------------|--|
| Current medicinal concerns and medical history | Correlation Coefficient | <b>-.238*</b>                                  |
|  | Sig. (2-tailed)         | <b>.021</b>                                    |
| Education                                      | Correlation Coefficient | <b>.318**</b>                                  |
|  | Sig. (2-tailed)         | <b>.001</b>                                    |
| Do you smoke regularly (male)                  | Chi-square              | <b>13.04</b>                                   |
|  | Sig. (2-tailed)         | <b>.005</b>                                    |
| Sexual health                                  | Correlation Coefficient | <b>.318**</b>                                  |
|  | Sig. (2-tailed)         | <b>.001</b>                                    |
| Feeling about talking sexual health            | Correlation Coefficient | <b>.252*</b>                                   |
|  | Sig. (2-tailed)         | <b>.011</b>                                    |
| Stress   | Correlation Coefficient | <b>-.250*</b>                                  |
|  | Sig. (2-tailed)         | <b>.012</b>                                    |

Table 34

*Correlations among Acculturation Aspect*

|   |                 | Identity (Chi) | acculturation Level |
|---|-----------------|----------------|---------------------|
| Chinese diet  | Chi-square      | <b>24.31</b>   |                     |
|   | Sig. (2-tailed) | <b>.018</b>    |                     |
| Chinese meal  | Chi-square      | <b>25.76</b>   |                     |
|   | Sig. (2-tailed) | <b>.012</b>    |                     |
| Regular meals on time                                   | Chi-square      |                | <b>34.04</b>        |
|   | Sig. (2-tailed) |                | <b>.000</b>         |
| Drinking  | Chi-square      | <b>44.02</b>   |                     |
|   | Sig. (2-tailed) | <b>.000</b>    |                     |
| Go to see psychological<br>consultation                 | Chi-square      | <b>30.38</b>   | <b>24.09</b>        |
|   | Sig. (2-tailed) | <b>.016</b>    | <b>.019</b>         |
| suggest to parents to see<br>psychological consultation | Chi-square      | <b>27.21</b>   | <b>23.43</b>        |
|   | Sig. (2-tailed) | <b>.039</b>    | <b>.024</b>         |
| suggest to child to see<br>psychological consultation   | Chi-square      | <b>55.41</b>   | <b>20.08</b>        |
|   | Sig. (2-tailed) | <b>.000</b>    | <b>.010</b>         |
| Dentist   | Chi-square      |                | <b>35.24</b>        |
|   | Sig. (2-tailed) |                | <b>.000</b>         |
| sexual health   | Chi-square      | <b>26.69</b>   |                     |
|   | Sig. (2-tailed) | <b>.009</b>    |                     |
| Length of stay  | Chi-square      | <b>319.08</b>  |                     |
|   | Sig. (2-tailed) | <b>.000</b>    |                     |



Table 35

*Multivariate Test Outcome for Stress*

|                   |                 | Stress |        |       |         |
|-------------------|-----------------|--------|--------|-------|---------|
|                   |                 | Low    | Median | High  | P value |
|                   | N               | 33     | 22     | 39    |         |
| Relevant variable | Age             | 50.24  | 40.68  | 39.15 | .000    |
| Adjusted variable | Total time stay | 157.76 | 136.14 | 67.18 | .000    |
|                   | N               | 29     | 20     | 37    |         |
| Relevant variable | Family income   | 3      | 2.40   | 1.62  | .002    |
| Adjusted variable | Total time stay | 152.69 | 129.15 | 63.68 | .000    |
|                   | Age             | 47.66  | 41.20  | 38.92 | .003    |
|                   | N               | 29     | 18     | 37    |         |
| Relevant variable | Employment      | 1.41   | .78    | 1.00  | .023    |
| Adjusted variable | Family income   | 3      | 2.33   | 1.62  | .002    |
|                   | Total time stay | 152.69 | 129.33 | 63.68 | .000    |
|                   | Age             | 47.66  | 40.22  | 38.92 | .002    |
|                   | N               | 29     | 18     | 37    |         |
| Relevant variable | Health Level    | 1.83   | 1.94   | 1.51  | .074    |
| Adjusted variable | Employment      | 1.41   | .78    | 1.00  | .023    |
|                   | Family income   | 3      | 2.33   | 1.62  | .002    |
|                   | Total time stay | 152.69 | 129.33 | 63.68 | .002    |
|                   | Age             | 47.66  | 40.22  | 38.92 | .000    |

Table 36

*Correlation between Stress and SEGHL (Annual Income Less than 20,000)*

|        |                                  | SEGHL   |
|--------|----------------------------------|---------|
| Stress | Spearman Correlation Coefficient | -.812** |
|        | Sig. (2-tailed)                  | .000    |

Table 37

*Multivariate Test Outcome for Sexual Health*

|                    |  | Sexual Health |         |           |                | P value. |
|--------------------|--|---------------|---------|-----------|----------------|----------|
|                    |  | Not important | Neutral | Important | Very important |          |
| N                  |  | 4             | 27      | 55        | 14             |          |
| Relevant variable  | Health level                           | 1.25          | 1.56    | 1.75      | 2.07           | .102     |
| Adjusted variables | Drinking                               | .50           | .89     | .98       | 1.93           | .001     |
|                    | Comfort of talking about sexual health | 2.50          | 2.44    | 2.56      | 3.29           | .004     |
|                    | Identity                               | 2.00          | 1.89    | 1.89      | 1.86           | .019     |

Table 38

*Multivariate Test Outcomes for Self-evaluated General Health Level (Total, Male & Female)*

|                    |  | General Health Level |      |           |           | P value. |
|--------------------|--|----------------------|------|-----------|-----------|----------|
|                    |  | Fair or worse        | Good | Very Good | Excellent |          |
| Male               | N                                      | 2                    | 12   | 27        | 7         |          |
| Relevant variable  | Smoking                                | .50                  | .33  | .00       | .00       | .001     |
| Adjusted variables | Comfort of talking about sexual health | 2.00                 | 2.67 | 2.74      | 3.29      | .078     |
|                    | Education level                        | 1.50                 | 2.83 | 3.81      | 3.71      | .003     |
|                    | Medical history                        | 1.00                 | .25  | .26       | .14       | .114     |
| Female             | N                                      | 2                    | 17   | 21        | 5         |          |
| Relevant variable  | Medical history                        | 1.00                 | .30  | .10       | .20       | .017     |
| Adjusted variables | Comfort of talking about sexual health | 3.00                 | 2.35 | 2.52      | 3.20      | .186     |
|                    | Education level                        | 4.00                 | 2.56 | 2.86      | 4.20      | .016     |
| Total              | N                                      | 4                    | 29   | 48        | 12        |          |
| Relevant variable  | Comfort of talking about sexual health | 2.50                 | 2.48 | 2.65      | 3.25      | .026     |
| Adjusted variables | Education level                        | 2.75                 | 2.72 | 3.40      | 3.92      | .006     |
|                    | Medical history                        | 1.00                 | .31  | .19       | .17       | .003     |
|                    | Smoking                                | .25                  | .14  | .00       | .00       | .013     |

## Appendix A

### Letter of Invitation

**Title of Study:** Chinese-Canadians' Perspectives on Health and Fitness

Research Investigators: Drs. Chunlei Lu (Brock University), Michelle McGinn (Brock University), Jian Liu (Brock University), and John Sylvestre (University of Ottawa).

We sincerely invite you to voluntarily participate in a research project entitled “Chinese-Canadians' perspectives on health and fitness”.

The purpose of this research project is to enhance the understanding of how Chinese immigrants' view of health evolves and how they integrate their practice into Canadian society. The results of this study will assist policy-maker and professionals to conduct culturally-appropriate practice in health care and health promotion systems, particularly for Chinese-Canadians.

The expected duration for your participation is about an hour, for a one-time audio-taped interview in Chinese or English. Shortly after the interview has been completed, I will send you a copy of the transcript to give you an opportunity to confirm the accuracy of the interview and to add or clarify any points should you wish.

This research will benefit you as a Chinese-Canadian to have an opportunity to reflect on your own health perceptions and practices, appreciate their East-West culture integration with respect to health and fitness, and to provide input into a study that may lead to culturally-appropriate practice in health care and health promotion systems. You will receive \$20 honorarium as well as appropriate travel/parking compensation for your contributions to this project.

This research is sponsored by “Social Sciences and Humanities Research Council of Canada and Sport Canada Joint Initiative Grant”. This research is conducted in four cities (Halifax, St. Catharines, Toronto, and Vancouver) across Canada. We would appreciate it if you could forward this invitation letter or its information to other Chinese-Canadians who are the residents of these cities and may be interested in participating in this project.

Requirement for recruiting participants:

1. First-generation Chinese immigrant
2. Canadian citizen or at least one-year residence in Canada as an immigrant
3. Primarily from mainland China, Hong Kong, Taiwan, and Macau, but not exclusively
4. Current residence is in one of the four cities: Toronto, Vancouver, St. Catharines and Halifax.
5. 25 years old and above
6. Fluent in Mandarin (preferred) or English
7. Regardless of gender, health condition, marital status, or with/without children, employment/unemployment, age. Yet, “variety” is preferred

If you are interested in participating in the project, please include the following information in your email to help us finalize the participant list:

1. The city that you currently live in
2. Age group that you belong to (25-40,41-50,51-60...we need participants from all age groups)
3. Your gender

4. Your occupation
5. The city that you grow up in
6. Your contact information
7. Time you prefer to be interviewed: weekends/week days, day/night

If you are interested in participating in this study or have related questions about this study, please contact Ms. Dengshu (Kelly) Chen at [dc06tu@brocku.ca](mailto:dc06tu@brocku.ca) (email) or (905) 688-5550 ext. 5567 (telephone).

If you have any concerns or questions about this study, please feel free to contact the Investigator, Dr. Chunlei Lu, (905-688-5550 ext. 5343 (telephone) or [lu@brocku.ca](mailto:lu@brocku.ca) (email).

This study has been reviewed and approved through Brock University's Research Ethics Board (file # 06-184-LUJ). If you have any pertinent questions about your rights as a participant, please contact the Brock University Research Ethics Officer (905 688-5550 ext 3035, [reb@brocku.ca](mailto:reb@brocku.ca)). All your responses to the interview will be assured anonymity in the reporting of the research for confidentiality.

Please check the following website for detailed information: <http://hi.baidu.com/buhealth>

Sincerely,

Chunlei Lu, Ph.D  
Assistant Professor  
Faculty of Education  
Brock University  
St. Catharines, Ontario, Canada, L2S 3A1  
Telephone: (905) 688-5550 ext. 5343  
Email: [Lu@brocku.ca](mailto:Lu@brocku.ca)

## **Appendix B**

### **Informed Consent**

**Date:** June 6, 2008

**Project Title:** Chinese-Canadians' Perspectives on Health and Fitness

Investigators: Chunlei Lu (Brock University), Michelle McGinn (Brock University), Jian Liu (Brock University), John C. Sylvestre (University of Ottawa).

#### **INVITATION**

You are invited to participate in a study that involves research. The purpose of this study is to enhance the understanding of how Chinese immigrants' view of health evolves and how they integrate their practice into Canadian society. The results of this study will assist professionals to conduct culturally-appropriate practice in health care and health promotion systems, particularly for Chinese-Canadians.

#### **WHAT'S INVOLVED**

As a participant, you will be asked to be face-to-face interviewed (audio-taped) in your familiar language (either Chinese or English) at a location (e.g., your home or your office) you preferred. Participation will take approximately one hour. Shortly after the interview has been completed, we will send you a copy of the transcript to give you an opportunity to confirm the accuracy of the interview and to add or clarify any points that you wish.

#### **POTENTIAL BENEFITS AND RISKS**

Possible benefits of participation include offering you an opportunity to reflect your own health perceptions and practices, appreciate East-West culture integration with respect to health and fitness, and to provide input into a study that may lead to culturally-appropriate practice in health care and health promotion systems. The results of this study will assist professionals to conduct culturally-appropriate practice in health care and health promotion systems, particularly for Chinese-Canadians. However, you may feel uncomfortable to disclose your privacy (e.g., family income, medical conditions). A number of measures will be employed to minimize such risk. For example, you have right to decline to answer any questions or withdraw any data you provide at any time with any consequences. You will receive \$20 honorarium and travel/parking compensation for contributing your time and knowledge to this project.

#### **CONFIDENTIALITY**

To protect confidentiality, a code will be assigned to each participant during the study, and only the Principal Investigator (Dr. Chunlei Lu) can access the code system so that no participants' identification will be disclosed. In addition, all data collected during this study will be stored in a locked cabinet in the Principal Investigator's office. Data will be kept for 5 years after the time of completion of the study. Then, all data will be disposed such as shredding data papers, erasing audio tapes, and deleting data in computer. Access to this coded data will be restricted to the research assistants exclusively for this project.

#### **VOLUNTARY PARTICIPATION**

Participation in this study is voluntary. If you wish, you may decline to answer any questions or participate in any component of the study. Further, you may decide to withdraw from this study at any time and may do so without any penalty or loss of benefits to which you are entitled.

**PUBLICATION OF RESULTS**

Results of this study may be published in professional journals and presented at conferences. Feedback about this study will be available. You may contact the Principal Investigator, Dr. Chunlei Lu, through email ([lu@brocku.ca](mailto:lu@brocku.ca)) or telephone (905-688-5550 ext. 5343) for the feedback in January 2010.

**CONTACT INFORMATION AND ETHICS CLEARANCE**

If you have any questions about this study or require further information, please contact the Principal Investigator (Dr. Chunlei Lu) using the contact information provided above. This study has been reviewed and received ethics clearance through the Research Ethics Board at Brock University (file # 06-184-LU). If you have any comments or concerns about your rights as a research participant, please contact the Research Ethics Office at (905) 688-5550 Ext. 3035, [reb@brocku.ca](mailto:reb@brocku.ca).

Thank you for your assistance in this project. Please keep a copy of this form for your records.

-----

**CONSENT FORM**

I agree to participate in this study described above. I have made this decision based on the information I have read in the Information-Consent Letter. I have had the opportunity to receive any additional details I wanted about the study and understand that I may ask questions in the future. I understand that I may withdraw this consent at any time.

Name: \_\_\_\_\_ Signature: \_\_\_\_\_

Are you willing to participate in a follow-up focus group discussion? Yes \_\_\_\_\_ No \_\_\_\_\_

Date: \_\_\_\_\_



## Appendix C

### Questionnaire (调查问卷)

#### Directions for interviewees (对被采访人说明):

- The purpose of this study is to enhance the understanding of how Chinese immigrants view health and fitness. The results of this study may assist professionals to conduct culturally-appropriate practice in health care and health promotion systems in Canada, particularly for Chinese-Canadians. 本科研课题的目的是提高对华人健康健身的理解。本课题的结果可以帮助加拿大的健康健身领域为华人提供有效地服务。
- Please note that you can decline to answer any questions in this questionnaire. 您可以拒绝回答本问卷中的任何问题
- Please fill up or select the best answers. 请填写或选择最合适的答案。
- If you are unsure about any questions, please put in “unsure”. 如果您对任何问题有疑问, 请填写 “unsure” (不清楚)。
- If the question does not apply to you, please write down “N/A” (not applicable). 如果某些问题不适合您, 请填写“N/A”(不适合)。

#### Basic information 基本信息:

1. City of your current Canadian residency 现居住的加拿大城市:
2. Age 年龄:
3. Gender 性别: Female 女\_\_\_\_; Male 男\_\_\_\_;
4. Hometown in China (where you grew up): province/city (主要成长地):省/市:
5. When did you immigrate (yyyy/mm) 什么时间移民到加拿大 (年/月):
6. Total time staying in Canada (yy/mm) 在加拿大居住时间共计 (年/月):
7. Did you stay in other countries (outside mainland China, Hong Kong, Macao, Taiwan) before coming to Canada? Where? How long (yy/mm)? 您是否在来加拿大之前在其它(中国大陆, 香港, 澳门, 或台湾以外的) 国家或地区居住过? 在哪: \_\_\_\_\_; 多长 (年/月): \_\_\_\_\_
8. Job before immigration into Canada 移民加拿大之前的工作:  
\_\_\_\_\_

## 9. Highest educational degree 最高学位

\_\_\_\_\_

Major 专业 \_\_\_\_\_, &amp; School 学校 \_\_\_\_\_

## 10. Citizenship 公民状况: Chinese 中国公民 \_\_; Canadian 加拿大公民 \_\_; Other 其它:

\_\_\_\_\_

## 11. Family (e.g., spouse, number of children and their ages)

家庭成员 (如: 配偶, 孩子数目及年龄):

6. Spouse 是否有配偶: Yes 是 \_\_; No 否 \_\_
5. Age of Child #1 (第 1 个孩子的年龄) \_\_\_\_\_
4. Age of Child #2 (第 2 个孩子的年龄) \_\_\_\_\_
3. Age of Child #3 (第 3 个孩子的年龄) \_\_\_\_\_
2. Age of Child #4 (第 4 个孩子的年龄) \_\_\_\_\_
1. Age of Child #5 (第 5 个孩子的年龄) \_\_\_\_\_

## 12. Annual family gross income (before tax) 家庭年大约毛收入(税前):

6. \_\_\_\_\_ \$100,000 and above
5. \_\_\_\_\_ \$80,000--100,000
4. \_\_\_\_\_ \$60,000--\$80,000
3. \_\_\_\_\_ \$40,000--\$60,000
2. \_\_\_\_\_ \$20,000--\$40,000
1. \_\_\_\_\_ under \$20,000

## 13. Employment 就业情况 (Please check all that apply 请选所有适用项):

- 6 \_\_\_\_\_ Student 学生
- 5 \_\_\_\_\_ Unemployed 待业
- 4 \_\_\_\_\_ Retired 退休
- 3 \_\_\_\_\_ Full-time work 全职工作
- 2 \_\_\_\_\_ Part-time work 兼职工作
- 1 \_\_\_\_\_ Under-employed (work that does not fully use your abilities, especially when the work is not in the trade or profession for which you was trained.) 从事非原专业工作 (如: 从事某些不能发挥个人才干的工作, 尤其是那些不是自己专业领域里或自己曾经培训过的专业工作)

13.2) if you are currently employed what kind of work (e.g., TA/RA, teacher, accountant, computer technician, security guard) 现工作种类 (如: 研究生助教/助研, 教师, 会计, 电脑技师, 保安等等):

\_\_\_\_\_

14. Does any of your family member having health related benefits? (e.g., having coverage of dental expenses and prescription drugs) for you and your family members 福利状况 (如: 您和家人能报销看牙医和买药的费用):

You 您自己: Yes 是 \_\_\_; No 否 \_\_\_

Your family member 您的家人: Yes 是 \_\_\_; No 否 \_\_\_

15. Does your or your family health insurance cover traditional Chinese medicine (e.g., acupuncture, Chinese herbs) 您或您家的医疗保险是否能报销中医中药 (如: 针灸, 中药).

Yes 是 \_\_\_; No 否 \_\_\_

16. Having regular personal doctors 现有自己的相对固定医生状况:

- 6 \_\_\_ Family physician 家庭医生  
 5 \_\_\_ Dentist 牙医  
 4 \_\_\_ Pediatrician 儿科医生  
 3 \_\_\_ OBGYN doctor 妇产科医生  
 2 \_\_\_ Optometrist 眼科医生  
 1 \_\_\_ Others 其他

17. Height (cm) 身高 (厘米):

18. Weight (kg) 体重 (公斤):

19. In general, would you say your level of health? 您认为您的健康状况是:

|                      |                     |                 |                |                 |
|----------------------|---------------------|-----------------|----------------|-----------------|
| Excellent<br>极好<br>5 | Very good<br>好<br>4 | Good<br>一般<br>3 | Fair<br>差<br>2 | Poor<br>很差<br>1 |
|----------------------|---------------------|-----------------|----------------|-----------------|

20. In general, would you say your level of fitness? 您认为您健壮吗?

|                       |                      |                 |                |                 |
|-----------------------|----------------------|-----------------|----------------|-----------------|
| Excellent<br>很健壮<br>5 | Very good<br>健壮<br>4 | Good<br>一般<br>3 | Fair<br>差<br>2 | Poor<br>很差<br>1 |
|-----------------------|----------------------|-----------------|----------------|-----------------|

21. Current medical concerns and medical history (e.g., general cardiovascular disease, diabetes, cancer, other systemic diseases) 现有病症及已往病史 (如: 心血管病, 糖尿病, 癌症, 或其它疾病):

---

Please select the ones that best reflect your practice 请选下列最适合的项目

22. Diet 饮食:

- a. How important for you to have Chinese diet (e.g., meals, drink) for your health? 您认为中国饮食对您的健康有多大的影响?

|                        |                 |               |                      |                               |
|------------------------|-----------------|---------------|----------------------|-------------------------------|
| Very important<br>非常重要 | Important<br>重要 | Neutral<br>一般 | Not important<br>不重要 | Not important at all<br>根本不重要 |
| 5                      | 4               | 3             | 2                    | 1                             |

- b. How often do you go to Chinese stores for groceries? 您通常多久会去买些中国食品?

5. \_\_\_\_\_ At least once a week 至少一星期一次
4. \_\_\_\_\_ Twice a month 一个月两次
3. \_\_\_\_\_ Once a month 一个月一次
2. \_\_\_\_\_ Fewer than once a month 一个月不到一次
1. \_\_\_\_\_ Do not go at all 根本不去

- c. How often do you have Chinese meals in a week? 您一星期通常吃几顿中国饭菜?

5. \_\_\_\_\_ Every major meal (lunch and dinner) or every meal (breakfast, lunch, and dinner) 每顿正餐 (午餐和晚餐) 或每顿 (早餐, 午餐, 和晚餐)
4. \_\_\_\_\_ One Chinese meal (either lunch or dinner) in a day 一天一顿 (午餐或晚餐)
3. \_\_\_\_\_ One Chinese meal every few days 几天一顿
2. \_\_\_\_\_ One Chinese meal per week 一星期一顿
1. \_\_\_\_\_ Fewer than once a week 少于一星期一顿

- d. How often do you have western fast foods or junk foods (e.g., burgers, pizza, chips) 您通常多久吃一顿西方快餐或垃圾食品(如: 汉堡包, 比萨饼, 炸薯片)?

|               |                |                   |                 |                                    |
|---------------|----------------|-------------------|-----------------|------------------------------------|
| Daily<br>每天一次 | Weekly<br>每周一次 | Biweekly<br>每两周一次 | Monthly<br>每月一次 | Fewer than once a month<br>一个月不到一次 |
| 5             | 4              | 3                 | 2               | 1                                  |

- e. How important do you think it is to have regular meals on time? 您认为准时吃饭有多重要?

|                        |                 |               |                      |                               |
|------------------------|-----------------|---------------|----------------------|-------------------------------|
| Very important<br>非常重要 | Important<br>重要 | Neutral<br>一般 | Not important<br>不重要 | Not important at all<br>根本不重要 |
| 5                      | 4               | 3             | 2                    | 1                             |

- f. Do you or your family member cook any western (or East-West combined) foods such as canned foods, pre-prepared meat, frozen vegetables)? What are they? 您或您家人是否做任何西式 (或东西方结合) 食品吗? 比如: 罐装食品, 即食肉类食品, 速冻食品。如果做的话, 那是什么?

- g. Are there any unhealthy Chinese foods styles that draw your attention or you think that need change? If there is any, what are they? 有什么不健康的中国饮食方式引起您注意的, 或是需要改善的? 如果有, 是什么?

**23. Oral health:** 口腔保健:

- a. How important is the oral health? 您认为口腔保健有多重要?
- |                |           |         |               |                      |
|----------------|-----------|---------|---------------|----------------------|
| Very important | Important | Neutral | Not important | Not important at all |
| 非常重要           | 重要        | 一般      | 不重要           | 根本不重要                |
| 5              | 4         | 3       | 2             | 1                    |
- b. Regular checkup (at least once a year) 常规牙科检查 (至少一年一次):  
Yes 是 \_\_; No 否 \_\_
- c. Regular cleaning (at least twice a year) 常规洗牙 (至少一年两次):  
Yes 是 \_\_; No 否 \_\_
- d. Brushing teeth 刷牙
5. \_\_\_\_\_ After each meal 每次饭后
  4. \_\_\_\_\_ Twice daily (e.g., morning and evening) 一天两次
  3. \_\_\_\_\_ Once daily (e.g., morning or evening) 一天一次
  2. \_\_\_\_\_ Once a week or a few times in a week 一个星期一次或几次
  1. \_\_\_\_\_ Never 从不
- e. Regular dental flossing 常规的口腔保养时是否常用牙线清除牙缝中食物碎屑:
5. \_\_\_\_\_ More than once a day 一天超过一次
  4. \_\_\_\_\_ Daily 一天一次
  3. \_\_\_\_\_ A few times in a week 一个星期几次
  2. \_\_\_\_\_ Once a week 一个星期一次
  1. \_\_\_\_\_ Never 从不

**24. Housing** 住房:

- a. Do you believe location and directions of housing affect a person's health (e.g., windows & sun)? 您相信房屋的位置和朝向对健康有影响吗 (如:窗户和采光)?
- |                  |         |         |             |                       |
|------------------|---------|---------|-------------|-----------------------|
| Strongly believe | Believe | Neutral | Not believe | Do not believe at all |
| 非常相信             | 相信      | 一般      | 不相信         | 根本不相信                 |
| 5                | 4       | 3       | 2           | 1                     |
- b. Do you believe "Fengshui" for health? 您相信“风水”对健康有影响吗?
- |                  |         |         |             |                       |
|------------------|---------|---------|-------------|-----------------------|
| Strongly believe | Believe | Neutral | Not believe | Do not believe at all |
| 非常相信             | 相信      | 一般      | 不相信         | 根本不相信                 |
| 5                | 4       | 3       | 2           | 1                     |

**25. Health-related habits/hobbies** 与健康有关的生活习惯和爱好:

- a. Do you smoke regularly? 您经常抽烟吗? Yes 是 \_\_\_\_\_; No 否 \_\_\_\_\_
- b. Do you agree that alcohol culture is an important part of traditional Chinese culture? 您认为酒文化是传统中国文化的重要部分吗?
- |                  |         |         |             |                       |
|------------------|---------|---------|-------------|-----------------------|
| Strongly believe | Believe | Neutral | Not believe | Do not believe at all |
| 非常相信             | 相信      | 一般      | 不相信         | 根本不相信                 |
| 5                | 4       | 3       | 2           | 1                     |

c. How often do you drink alcohol? 您多久喝一次酒?

5. \_\_\_\_\_ daily 每天
4. \_\_\_\_\_ a few times in a week 一星期几次
3. \_\_\_\_\_ once a week 一星期一次
2. \_\_\_\_\_ once a month or a few times in a year 一个月一次或一年几次
1. \_\_\_\_\_ never 从不

26. Psychological health 心理健康:

a. How important is psychological health? 您认为心理健康有多重要?

|                |           |         |               |                      |
|----------------|-----------|---------|---------------|----------------------|
| Very important | Important | Neutral | Not important | Not important at all |
| 非常重要           | 重要        | 一般      | 不重要           | 根本不重要                |
| 5              | 4         | 3       | 2             | 1                    |

b. How comfortable do you feel to talk about psychological health in general? 通常您谈论心理健康时觉得自然吗?

|                  |             |         |               |                    |
|------------------|-------------|---------|---------------|--------------------|
| Very comfortable | Comfortable | Neutral | Uncomfortable | Very uncomfortable |
| 非常自然             | 自然          | 一般      | 不自然           | 很不自然               |
| 5                | 4           | 3       | 2             | 1                  |

c. Would you go to see a psychiatrist if you had psychological problems? 假若您遇到心理问题, 您会去看心理医生吗?

|            |       |            |    |                |
|------------|-------|------------|----|----------------|
| Absolutely | Maybe | Don't know | No | Absolutely not |
| 当然         | 也许    | 不知道        | 不会 | 肯定不会           |
| 5          | 4     | 3          | 2  | 1              |

d. Would you suggest to your parents to see a psychiatrist if they had psychological problems? 如果您父母遇到心理问题, 您会建议他们去看心理医生吗?

|            |       |            |    |                |
|------------|-------|------------|----|----------------|
| Absolutely | Maybe | Don't know | No | Absolutely not |
| 当然         | 也许    | 不知道        | 不会 | 肯定不会           |
| 5          | 4     | 3          | 2  | 1              |

e. Would you suggest your child to see a psychiatrist if he/she had psychological problems? 如果您的孩子遇到心理问题, 您会建议他们去看心理医生吗?

|            |       |            |    |                |
|------------|-------|------------|----|----------------|
| Absolutely | Maybe | Don't know | No | Absolutely not |
| 当然         | 也许    | 不知道        | 不会 | 肯定不会           |
| 5          | 4     | 3          | 2  | 1              |

- f. Please rank your current stress levels of the following aspects, if applicable, using “very stressful (5) → no stress (1)”: 请您对表中所列的适合您情况的内容选择您当前面临的压力程度.

|                                  | <b>Very stressful</b><br>压力很大 (5) | <b>Stressful</b><br>有压力 (4) | <b>Neutral</b><br>一般 (3) | <b>Not very stressful</b><br>没多大压力 (2) | <b>No stress at all</b> 根本没压力(1) |
|----------------------------------|-----------------------------------|-----------------------------|--------------------------|--|----------------------------------|
| <b>Study</b><br>学习               |                                   |                             |                          |  |                                  |
| <b>Job</b><br>工作                 |                                   |                             |                          |  |                                  |
| <b>Finance</b><br>经济             |                                   |                             |                          |  |                                  |
| <b>Family</b><br>家庭              |                                   |                             |                          |  |                                  |
| <b>Language</b><br>语言            |                                   |                             |                          |  |                                  |
| <b>Cultural conflict</b><br>文化冲突 |                                   |                             |                          |  |                                  |
| <b>Others</b><br>其它              |                                   |                             |                          |  |                                  |

## 27. Social aspects of health 社交方面的健康:

- a. How important are social aspects of health? 您认为社交对于健康有多重要?

|                |           |         |               |                      |
|----------------|-----------|---------|---------------|----------------------|
| Very important | Important | Neutral | Not important | Not important at all |
| 非常重要           | 重要        | 一般      | 不重要           | 根本不重要                |
| 5              | 4         | 3       | 2             | 1                    |

- b. What kind of friends do you prefer to make (put in sequential order using numbers)?  
您愿意结交下列哪些种类的朋友 (请用数字标注先后顺序)?

5. \_\_\_\_\_ Chinese 华人
4. \_\_\_\_\_ Koreans and Japanese who share the similar culture 拥有相似文化的韩国人和日本人
3. \_\_\_\_\_ Caucasian (white) friends 白人朋友
2. \_\_\_\_\_ Other minorities 其他少数族裔
1. \_\_\_\_\_ All kinds of friends 各类朋友

## 28. Sexual health 性方面:

- a. How important is sexual health to you? 您认为性生活对健康有多重要?

|                |           |         |               |                      |
|----------------|-----------|---------|---------------|----------------------|
| Very important | Important | Neutral | Not important | Not important at all |
| 非常重要           | 重要        | 一般      | 不重要           | 根本不重要                |
| 5              | 4         | 3       | 2             | 1                    |

c. How comfortable do you feel to talk about it? 通常您觉得谈论性时自然吗?

|                               |                        |                    |                           |                                 |
|-------------------------------|------------------------|--------------------|---------------------------|---------------------------------|
| Very comfortable<br>非常自然<br>5 | Comfortable<br>自然<br>4 | Neutral<br>一般<br>3 | Uncomfortable<br>不自然<br>2 | Very uncomfortable<br>很不自然<br>1 |
|-------------------------------|------------------------|--------------------|---------------------------|---------------------------------|

29. How much do you know the health care systems (e.g., hospital) in Canada?

您对加拿大的“医疗体系”(如医院)有多么了解?

|                                |                         |                        |                               |                                  |
|--------------------------------|-------------------------|------------------------|-------------------------------|----------------------------------|
| Know sufficiently<br>非常了解<br>5 | Know a lot<br>了解很多<br>4 | Know some<br>了解一些<br>3 | Know very little<br>了解很少<br>2 | Do not know at all<br>根本不了解<br>1 |
|--------------------------------|-------------------------|------------------------|-------------------------------|----------------------------------|

30. How much do you know the health promotion systems (e.g., community health workshops and various health-related physical activity programs) in Canada? 您对加拿大的“促进健康”体系(例如, 社区健康知识讲座和各种健身活动项目)多么了解?

|                                |                         |                        |                               |                                  |
|--------------------------------|-------------------------|------------------------|-------------------------------|----------------------------------|
| Know sufficiently<br>非常了解<br>5 | Know a lot<br>了解很多<br>4 | Know some<br>了解一些<br>3 | Know very little<br>了解很少<br>2 | Do not know at all<br>根本不了解<br>1 |
|--------------------------------|-------------------------|------------------------|-------------------------------|----------------------------------|

31. What kind of family physician would you like the most in Canada (sequential order using numbers)? 在加拿大您最想要以下哪类家庭医生(请用数字标注先后顺序)?

5. \_\_\_\_\_ Family physician with Chinese heritage 华人家庭医生
4. \_\_\_\_\_ Any family physician who knows Chinese medicine 任何了解中医的家庭医生
3. \_\_\_\_\_ Any family physician with cross-cultural training 任何受过跨文化训练的家庭医生
2. \_\_\_\_\_ Any family physician 任何家庭医生
1. \_\_\_\_\_ None 不想要任何家庭医生

32. What kind of dentist would you like the most in Canada (put in sequential order using numbers)? 在加拿大您最想要以下哪类牙医(请用数字标注先后顺序)?

5. \_\_\_\_\_ Chinese dentist 华人牙医
4. \_\_\_\_\_ Any dentist who knows Chinese medicine 任何了解中医的牙医
3. \_\_\_\_\_ Any dentist with cross-cultural training 任何受过跨文化训练的牙医
2. \_\_\_\_\_ Any dentist 任何牙医
1. \_\_\_\_\_ None 不想要任何牙医

33. Do you have regular annual health checkup? 您做年度常规的身体健康检查吗?

Yes 是 \_\_\_; No 否 \_\_\_

34. How often do you use traditional Chinese medicine (TCM) (e.g., buy in Chinese stores outside China or bring from China)? 您经常使用传统中药吗(如: 在中国店购买的或从中国带来的)?

|                   |                  |                      |                         |                  |
|-------------------|------------------|----------------------|-------------------------|------------------|
| Always<br>总是<br>5 | Often<br>经常<br>4 | Sometimes<br>有时<br>3 | Occasionally<br>偶尔<br>2 | Never<br>从不<br>1 |
|-------------------|------------------|----------------------|-------------------------|------------------|



35. How often do you see TCM professionals (e.g., acupuncturist, acupressurist, TCM herbalist) in Canada? 在加拿大您经常看传统中医药专业人士吗（如：针灸师，推拿师，中药剂师）？

| Always | Often | Sometimes | Occasionally | Never |
|--------|-------|-----------|--------------|-------|
| 总是     | 经常    | 有时        | 偶尔           | 从不    |
| 5      | 4     | 3         | 2            | 1     |

36. Due to the changes after immigration, what would you feel about you are now 由于移民产生的变化，您认为自己是：

5. \_\_\_\_\_ Still 100% Chinese (仍是 100% 中国人)
4. \_\_\_\_\_ Mostly Chinese, some Canadian (大部分属中国人，一小部分属加拿大人)
3. \_\_\_\_\_ Half Chinese and half Canadian (一半中国人，一半加拿大人)
2. \_\_\_\_\_ Mostly Canadian, some Chinese (大部分属加拿大人，一小部分属中国人)
1. \_\_\_\_\_ 100% Canadian (100% 加拿大人)

37. Which one of the following four different modes of adaptation do you think you are experiencing 在下列四种不同模式中，您认为您正在经历以下哪一种：

4. \_\_\_\_\_ Assimilation: Individuals do not wish to maintain their cultural heritage and seek daily interaction with larger society. 同化：不保持原有文化的特性，融合到主流社会
3. \_\_\_\_\_ Integration: simultaneous adherence to traditional culture and adoption of some dominant societal values. 融合：在保持传统文化习惯的同时吸收一些主流社会的价值观。
2. \_\_\_\_\_ Marginalization: alienation from the dominant society together with loss of cultural identity. 处于社会边缘：远离主流社会同时又丢失了传统文化特性。
1. \_\_\_\_\_ Separation: the self-imposed withdrawal from the dominant society while maintaining a traditional cultural identity. 隔离：保持自己的传统文化特性同时拒绝主流社会。

38. Which one of the four different modes above do you think most Chinese are experiencing 在下列四种不同模式中，您认为大多数华人正在经历哪一种：

4. \_\_\_\_\_ Assimilation 同化
3. \_\_\_\_\_ Integration 融合
2. \_\_\_\_\_ Marginalization 处于社会边缘
1. \_\_\_\_\_ Separation 隔离

## Appendix D

## Brock University Research Ethics Board (REB)

## Application for Ethical Review of Research Involving Human Participants

Please refer to the documents “Brock University Research Ethics Guidelines”, which can be found at <http://www.brocku.ca/researchservices/>, prior to completion and submission of this application.

If you have questions about or require assistance with the completion of this form, please contact the Research Ethics Office at (905) 688-5550 ext. 3035, or [reb@brocku.ca](mailto:reb@brocku.ca).

Return your completed application and all accompanying material **in triplicate** to the  
**Research Ethics Office in MacKenzie Chown D250A.**  
 Please ensure all necessary items are attached prior to submission,  
 otherwise your application will not be processed (see checklist below).

*No research with human participants shall commence prior to receiving approval from the research ethics board.*

| DOCUMENT CHECKLIST   | ✓ if applicable                   |
|--|-----------------------------------|
| <p><b>3 complete sets of the following documents (one original + 2 copies)</b></p> <p>Please Note: Handwritten Applications will <i>not</i> be accepted.</p>   |                                   |
| Recruitment Materials <ul style="list-style-type: none"> <li>• Letter of invitation</li> <li>• Verbal script</li> <li>• Telephone script</li> <li>• Advertisements (newspapers, posters, SONA)</li> <li>• Electronic correspondence guide</li> </ul> | [ X ]<br>[ ]<br>[ ]<br>[ ]<br>[ ] |
| Consent Materials <ul style="list-style-type: none"> <li>• Consent form</li> <li>• Assent form for minors</li> <li>• Parental/3<sup>rd</sup> party consent</li> <li>• Transcriber confidentiality agreement</li> </ul>                               | [ X ]<br>[ ]<br>[ ]<br>[ ]        |
| Data Gathering Instruments <ul style="list-style-type: none"> <li>• Questionnaires</li> <li>• Interview guides</li> <li>• Tests</li> </ul>   | [ ]<br>[ X ]<br>[ ]               |
| Feedback Letter  | [ ]                               |
| Letter of Approval for research from cooperating organizations, school board(s), or other institutions   | [ ]                               |
| Any previously approved protocol to which you refer  | [ ]                               |
| Request for use of human tissue sample in research   | [ ]                               |
| Please Note: this form is required for all research projects involving human tissue,   | [ ]                               |

|                         |       |
|-------------------------|-------|
| bodily fluids, etc.     |       |
| Signed Application Form | [ X ] |

**Office of Research Services**  
 Brock University • 500 Glenridge Ave • St. Catharines, ON • L2S 3A1 • Fax: 905-688-0748

Revised: August 2006

## SIGNATURES

### Principal Investigator:

Please indicate that you have read and fully understand all ethics obligations by checking the box beside each statement.

- I have read Section III:8 of Brock University’s Faculty Handbook pertaining to Research Ethics and agree to comply with the policies and procedures outlined therein.
- I will report any serious adverse events (SAE) to the Research Ethics Board (REB).
- Any additions or changes in research procedures after approval has been granted will be submitted to the REB.
- I agree to request a renewal of approval for any project continuing beyond the expected date of completion or for more than one year.
- I will submit a final report to the Office of Research Services once the research has been completed.
- I take full responsibility for ensuring that all other investigators involved in this research follow the protocol as outlined in this application.

Signature \_\_\_\_\_ Date: December 8, 2006

### Co-Investigators:

Signature \_\_\_\_\_ Date: \_\_\_\_\_

Signature \_\_\_\_\_ Date: \_\_\_\_\_

Signature \_\_\_\_\_ Date: \_\_\_\_\_

### Faculty Supervisor:

Please indicate that you have read and fully understand the obligations as faculty supervisor listed below by checking the box beside each statement.

- I agree to provide the proper supervision of this study to ensure that the rights and welfare of all human participants are protected.
- I will ensure a request for renewal of a proposal is submitted if the study continues beyond the expected date of completion or for more than one year.
- I will ensure that a final report is submitted to the Office of Research Services.
- I have read and approved the application and proposal.

Signature \_\_\_\_\_ Date: \_\_\_\_\_

## SECTION A – GENERAL INFORMATION

1. **Title of the Research Project:** Chinese-Canadians' perspectives on health and fitness

2. **Investigator Information:**

|                               | Name       | Position (e.g.,<br>faculty, student,<br>visiting professor) | Dept./Address | Phone No. | E-Mail   |
|-------------------------------|------------|---|---------------|-----------|--|
| <b>Principal Investigator</b> | Chunlei Lu | faculty   | Preservice    | Ext. 5343 | <a href="mailto:lu@brocku.ca">lu@brocku.ca</a> |
| <b>Co-Investigator(s)</b>     |            |   |               |           |  |
| <b>Faculty Supervisor(s)</b>  |            |   |               |           |  |

3. **Proposed Date (dd/mm/yyyy)** (a) of commencement: 08/01/2007 (b) of completion: 08/01/20104. **Indicate the location(s)** where the research will be conducted:

Brock University    
Community Site  Specify (Chinese communities in seven cities, Vancouver, Edmonton, Winnipeg, Toronto, St. Catharines, Montreal, and Halifax across Canada)   
School Board  Specify   
Hospital  Specify   
Other  Specify

5. **Other Ethics Clearance/Permission:**

(a) Is this a multi-centered study?  Yes  No   
(b) Has any other University Research Ethics Board approved this research?  Yes  No

If **YES**, there is no need to provide further details about the protocol **at this time**, provided that **all** of the following information is provided:

Title of the project approved elsewhere:   
Name of the Other Institution:   
Name of the Other Board:   
Date of the Decision:   
A contact name and phone number for the other Board:\*

Please provide a copy of the application to the other institution together with all accompanying materials, as well as a copy of the clearance certificate / approval.

If **NO**, will any other Research Ethics Board be asked for approval?  Yes  No   
Specify University/College

(d) Has any other person(s) or institutions granted permission to conduct this research?  Yes  No   
Specify (e.g., school boards, community organizations, proprietors)

6. **Level of the Research:**

Undergraduate  Masters Thesis/Project  Ph.D.   
 Post Doctorate  Faculty Research  Administration



Are any of the following procedures or methods involved in this study? Check **all** that apply.

- |  |  |  |
|--|--|--|
| <input type="checkbox"/> Questionnaire (mail)                | <input type="checkbox"/> Focus Groups  | <input type="checkbox"/> Non-invasive physical measurement (e.g., exercise, heart rate, blood pressure)                |
| <input type="checkbox"/> Questionnaire (email/web)           | <input type="checkbox"/> Journals  | <input type="checkbox"/> Analysis of human tissue, body fluids, etc. (Request for Use of Human Tissue Sample attached) |
| <input type="checkbox"/> Questionnaire (in person)           | <input checked="" type="checkbox"/> Audio/video taping (specify)                                   | <input type="checkbox"/> Other: (specify)  |
| <input type="checkbox"/> Interview(s) (telephone)            | <input type="checkbox"/> Observations  |  |
| <input checked="" type="checkbox"/> Interview(s) (in person) | <input type="checkbox"/> Invasive physiological measurements (e.g., venipuncture, muscle biopsies) |  |
| <input type="checkbox"/> Secondary Data                      |  |  |
| <input type="checkbox"/> Computer-administered tasks         |  |  |

Describe sequentially, and in detail, all of the methods involved in this study and all procedures in which the research participants will be involved (e.g., paper and pencil tasks, interviews, questionnaires, physical assessments, physiological tests, time requirements, etc.)

**Attach a copy of all questionnaire(s), interview guides, or other test instruments.**

The participant will be involved in a two-hour interview. It is one-time, audio-taped, individual, and face-to-face. In addition, the participants will also have an opportunity to verify the written transcript of the recorded interview, which may take 15-20 minutes.

**11. Professional Expertise/Qualifications:**

Does this procedure require professional expertise/recognized qualifications (e.g., registration as a clinical psychologist, first aid certification)?

- Yes** specify:  **No**

If **YES**, indicate whether you, your supervisor, or any members of your research team have the professional expertise/recognized qualifications required?

- Yes**     **No**

**12. Participants:**

Describe the number of participants and any required demographic characteristics (e.g., age, gender).

A total of 140 participants, 70 males and 70 females, will be recruited in the seven cities cross Canada, 20 of each city. The criteria of the recruitment include: first generation Chinese-Canadians, age of 25 years old and above, and fluent in Mandarin or English, regardless of their health status. The invitation letter, informed consent, and interview guide will be available in both Chinese and English.

**13. Recruitment:**

Describe how and from what sources the participants will be recruited, including any relationship between the investigator(s), sponsor(s) and participant(s) (e.g., family member, instructor-student; manager-employee).

**Attach a copy of any poster(s), advertisement(s) and/or letter(s) to be used for recruitment.**

I already have some acquaintances in the aforementioned seven cities. This will allow using snowball sampling method to recruit participants. To ensure that potential participants do not feel coerced to participate, I will have research assistants who do not know my acquaintances to contact potential participants (e.g., these acquaintances

and Chinese-Canadians that they know who might be interested in participating in this research), and to distribute the invitation letter in local Chinese communities (e.g., advertising in local Chinese newspapers, posting the invitation letter in Chinese associations) in the seven cities. In addition, all participants will be explicitly informed, during the initial contact, that the participation is voluntary and they can withdraw at any time without any consequences.

14. **Compensation:** **Yes** **No**
- (a) Will participants receive compensation for participation?
- (b) If yes, please provide details.

According to Chinese culture, it is a tradition to offer participants the honorarium (\$20 in this study) as a token to appreciate their contributions to the project, in addition to travel and parking expenses for the interview.

### SECTION C – DESCRIPTION OF THE RISKS AND BENEFITS OF THE PROPOSED RESEARCH

15. **Possible Risks:**
1. Indicate if the participants might experience any of the following risks:
- a) Physical risks (including any bodily contact, physical stress, or administration of any substance)?  **Yes**  **No**
- b) Psychological risks (including feeling demeaned, embarrassed worried or upset, emotional stress)?  **Yes**  **No**
- c) Social risks (including possible loss of status, privacy, and / or reputation)?  **Yes**  **No**
- d) Are any possible risks to participants greater than those that the participants might encounter in their everyday life?  **Yes**  **No**
- e) Is there any deception involved?  **Yes**  **No**
- f) Is there potential for participants to feel coerced into contributing to this research (e.g., because of regular contact between them and the researcher)?  **Yes**  **No**
2. If you answered **Yes** to any of 1a – 1f above, please explain the risk.

Some participants may feel uncomfortable to disclose their privacy, for example, their family income, medical conditions. In addition, there might be a potential risk of coercion for some potential participants who know the principal researcher when being contacted.

3. Describe how the risks will be managed and include the availability of appropriate medical or clinical expertise, qualified persons. Explain why less risky alternative approaches could not be used.

A number of steps will be taken to minimize such potential risk. The researcher will:

- 1) inform all participants, in the “Invitation Letter” and “Informed Consent Form”, the purpose of the project and indicate that it is voluntary, and will not affect participants’ professional career or personal life in any way, and that all their responses to the interview will be assured anonymity in the reporting of the research for confidentiality;
- 2) inform all participants that they have a right to not participate, to withdraw at any time without prejudice to pre-existing entitlements;
- 3) inform all participants that all written data will be validated by giving back data related to participants and allowing them to verify;
- 4) inform all participants that any responses to the interview can be returned to the participants, withdrawn, or eliminated from the research at the participant’s request without any consequences. A copy of any personal responses will be available to each participant;
- 5) send the interview questions to all participants prior to the scheduled interview time to allow them to prepare;
- 6) ask each participant if he or she feels comfortable in answering questions or conversing during the interview;
- 7) inform the participants that the data gathered will be placed in a secured area during the study, and will be locked and kept in a secure place for a minimum of 5 years after the time of publication; and
- 8) ensure all research assistants in this project will be adequately trained, and fully understand and follow the aforementioned steps.

Less risky alternative approaches such as guessing or asking around about participants’ important information (e.g., family income, medical conditions) related will not be accurate and will yield useless data for this project.

#### 16. **Possible Benefits:**

Discuss any potential direct benefits to the participants from their involvement in the project. Comment on the (potential) benefits to the scientific community/society that would justify involvement of participants in this study.

For participants, they can have an opportunity to reflect on their own health perceptions and practices, appreciate their East-West culture integration with respect to health and fitness, and to provide input into a study that may lead to culturally-appropriate practice in health care and health promotion systems.

For the scientific community/society, the present study can help enhance the understanding of how Chinese-Canadians’ view of health evolves and how they integrate their practice into Canadian society against the backdrop of immigration process. Moreover, this study may advance the knowledge in terms of assisting professionals to conduct culturally-appropriate practice in health care and health promotion systems. In addition, building upon the present study, other researchers can carry out similar investigations among other minorities in Canada to deeply understand different perspectives in health and fitness.

## SECTION D – THE INFORMED CONSENT PROCESS

#### 17. **The Consent Process:**

Describe the process that the investigator(s) will be using to obtain informed consent. Include a description of who will be obtaining the informed consent. If there will be no written consent form, explain why not.



For information about the required elements in the letter of invitation and the consent form, as well as samples, please refer to:

[https://www.brocku.ca/researchservices/ethics/humanethics/humanethics\\_samples\\_guidelines.php](https://www.brocku.ca/researchservices/ethics/humanethics/humanethics_samples_guidelines.php)

**If applicable, attach a copy of the Letter of Invitation, the Consent Form, the content of any telephone script, and any other material that will be utilized in the informed consent process.**

Currently, I have a number of contact among Chinese-Canadian communities in the seven aforementioned research sites (cities). I will send them an invitation letter via email to explain the project and ask them for the possibilities of involvement, and I will also ask them to distribute the information letter to individuals they know and they will in turn contact me if they are interested in participating in this research project (Please see the attached Invitation Letter for details).

**18. Consent by an authorized party:**

If the participants are minors or for other reasons are not competent to consent, describe the proposed alternative source of consent, including any permission form to be provided to the person(s) providing the alternative consent.

N/A

**19. Alternatives to prior individual consent:**

If obtaining individual participant consent prior to commencement of the research project is not appropriate for this research, please explain and provide details for a proposed alternative consent process.

In the seven cities, there usually have been Chinese associations, newspapers, and/or Chinese language schools. The Invitation Letter can be distributed through the three media as alternatives.

**20. Feedback to Participants:**

Explain what feedback/ information will be provided to the participants after participation in the project. Include, for example, a more complete description of the purpose of the research, and access to the results of the research. Also, describe the method and timing for delivering the feedback.

The major findings of the study will be provided to the participants through email or regular mail after participation in the project in January 2010. A short executive summary of the study will also be submitted to the Chinese associations, newspapers, and language schools in Canada, particularly in the seven cities involved.

**21. Participant withdrawal:**

a) Describe how the participants will be informed of their right to withdraw from the project. Outline the procedures that will be followed to allow the participants to exercise this right.

The participants will be informed of their right to withdraw from the project in the Invitation Letter at the beginning of the recruitment. Their right to withdraw will also be stressed again at the beginning of the interview, and when sending transcript back for verification.

b) Indicate what will be done with the participant's data and any consequences that withdrawal might

have on the participant, including any effect that withdrawal may have on participant compensation.

The participants will be informed that any responses to the interview can be returned to the participants if they withdraw from the study and without any consequences. Yet, the \$20 honorarium and compensation for travel time and parking expenses only apply for those who were already interviewed. Participants who withdraw from the study after the interview do not need to return the \$20 honorarium and travel/parking compensation.

## SECTION E – CONFIDENTIALITY & ANONYMITY

**Confidentiality:** information revealed by participants that holds the expectation of privacy. This means that all data collected will not be shared with anyone except the researchers listed on this application.

**Anonymity of data:** information revealed by participants will not have any distinctive character or recognition factor, such that information can be matched (**even by the researcher**) to individual participants. Any information collected using audio-taping, video recording, or interview cannot be considered anonymous. **Please note that this refers to the anonymity of the data itself and not the reporting of results.**

22. Given the definitions above, in the project(s):

- a) Will the data be treated as confidential?     **Yes**                       **No**
- b) Are the data anonymous?                                       **Yes**                       **No**
- c) Describe any **personal identifiers** that will be collected during the course of the research (e.g., participant names, initials, addresses, birth dates, student numbers, organizational names and titles etc.). Indicate how personal identifiers will be secured and if they will be **retained** once data collection is complete.

The personal identifiers, such as the participant's name, address, and age, will be collected during the course of the research. However, a code will be assigned to each participant during the study, and only the Principal Investigator (Dr. Chunlei Lu) can access the code system so that no participants' identification will be disclosed. In addition, all data collected during this study will be stored in a locked cabinet in the Principal Investigator's office.

- d) If any personal identifiers will be **retained** once data collection is complete, provide a comprehensive rationale explaining why it is necessary to retain this information, **including the retention of master lists that link participant identifiers with unique study codes and de-identified data.**

It is necessary to retain personal identifiers 1) for general data organization and for sending participants for data verification, and 2) in case some participants withdraw part or all responses in data.

e) State who will have access to the data.

Only the Principal Investigator (Dr. Chunlei Lu).

f) Describe the procedures to be used to ensure anonymity of participants and/or confidentiality of data **both during the conduct of the research and in the release of its findings.**

During the conduct of the research, a code will be used for each participant. The master lists that link participant identifiers with unique study codes and de-identified data will be securely stored in the principal investigator's (Chunlei Lu) office and can be accessed by him. All data analysis will be conducted using the code system. In the release of its findings, unidentifiable expressions will be used such as "most participants believe" or "one participant states".

g) If participant anonymity and/or confidentiality is not appropriate to this research project, explain, in detail, how all participants will be advised that data will not be anonymous or confidential.

N/A

h) Explain how written records, video/audio tapes, and questionnaires will be secured, and provide details of their final disposal or storage, including how long they will be secured and the disposal method to be used.

All written records, audio tapes, and transcripts will be locked in a cabinet in the principal investigator's (Chunlei Lu) office and can be accessed by him. Data will be kept for 5 years after the time of completion of the study. Then, all data will be properly disposed, such as shredding data papers, erasing audio tapes, and deleting data in computer.

## SECTION F -- SECONDARY USE OF DATA

23. a) Is it your intention to reanalyze the data for purposes other than described in this application?

Yes  No

b) Is it your intention to allow the study and data to be reanalyzed by colleagues, students, or other researchers outside of the original research purposes? If this is the case, explain how you will allow your participants the opportunity to choose to participate in a study where their data would be distributed to others (state how you will contact participants to obtain their re-consent)

No.

If there are no plans to reanalyze the data for secondary purposes and, yet, you wish to keep the data indefinitely, please explain why.

No.

## SECTION G -- MONITORING ONGOING RESEARCH

24. **Annual Review and Serious Adverse Events (SAE):**

a) Minimum review requires the completion of a "Renewal/Project Completed" form at least annually.

Indicate whether any additional monitoring or review would be appropriate for this project.

**It is the investigator's responsibility to notify the REB using the "Renewal/Project Completed" form, when the project is completed or if it is cancelled.**

***<http://www.brocku.ca/researchservices/Forms/Forms.html>***

|     |
|-----|
| N/A |
|-----|

**\*Serious adverse events** (unanticipated negative consequences or results affecting participants) **must be reported** to the Research Ethics Officer and the REB Chair, **as soon as possible** and, in any event, no more than 3 days subsequent to their occurrence.

25. **COMMENTS**

If you experience any problems or have any questions about the Ethics Review Process at Brock University, please feel free to contact the Research Ethics Office at (905) 688-5550 ext 3035, or reb@brocku.ca.

## Appendix E

### Ethics Approval

DATE: January 24, 2007

FROM: Linda Rose-Krasnor, Chair, Research Ethics Board (REB)

TO: Chunlei Lu, Education

FILE: 06-184 - LU

TITLE: Chinese-Canadians' perspectives on health and fitness

The Brock University Research Ethics Board has reviewed the above research proposal.

**DECISION: Accepted as clarified.**

This project has received ethics clearance for the period of January 24, 2007 to January 8, 2010 subject to full REB ratification at the Research Ethics Board's next scheduled meeting. The clearance period may be extended upon request. *The study may now proceed.*

Please note that the Research Ethics Board (REB) requires that you adhere to the protocol as last reviewed and cleared by the REB. During the course of research no deviations from, or changes to, the protocol, recruitment, or consent form may be initiated without prior written clearance from the REB. The Board must provide clearance for any modifications before they can be implemented. If you wish to modify your research project, please refer to <http://www.brocku.ca/researchservices/forms> to complete the appropriate form **Revision or Modification to an Ongoing Application**.

Adverse or unexpected events must be reported to the REB as soon as possible with an indication of how these events affect, in the view of the Principal Investigator, the safety of the participants and the continuation of the protocol.

If research participants are in the care of a health facility, at a school, or other institution or community organization, it is the responsibility of the Principal Investigator to ensure that the ethical guidelines and clearance of those facilities or institutions are obtained and filed with the REB prior to the initiation of any research protocols.

The Tri-Council Policy Statement requires that ongoing research be monitored. A Final Report is required for all projects upon completion of the project. Researchers with projects lasting more than one year are required to submit a Continuing Review Report annually. The Office of Research Services will contact you when this form *Continuing Review/Final Report* is required.

Please quote your REB file number on all future correspondence.

LRK/bb

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