Oral Health Beliefs and Dental Health Care-seeking Behaviors among Chinese Immigrants

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2006-08-20

A thesis submitted to McGill University in partial fulfilment of the requirements of the degree of Master of Science
Mei Dong 2006
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DEDICATION TO

my mother, Qifang Zeng, who taught me love of life,

my father, Kaiwen Wang, who taught me love of knowledge,

my husband, Hao Qin, who encourages me to bravely face frustration,

and my son, Yujun Qin, who delights me and gives me hope.
I faithfully thank from the bottom of my heart Dr. Christophe Bedos, my supervisor, for his huge valuable suggestions and constant support during this research. His help will remain in my memory for my lifetime. I can not reach the light of the day without his support. He has dedicated much time and effort to teaching me both in this research and in the documentation of it that my labors will never be able to match his devotion. He provided a motivating, enthusiastic, and critical atmosphere during the many discussions we had. His exceedingly enthusiastic and integral view on research and his mission to provide only high-quality work has made a deep impression on me.

I faithfully appreciate Mr. Zheng Jiaxin and Huang Jinrong for their great helps during recruiting participants and data collection.

Above all, thank you— my husband and my parents-in-law — for your love, support and taking over my share of household chores, a huge incentive to thesis writing. Also thanks to my brother Jingsong, my aunt Wang Xiuzeng and my uncle Wang Cunzeng for their financial and spiritual support.

Last but not the least, I am thankful to Mrs. Levine Alissa and Mrs. Loignon Christine for their suggestions and literary advice.

I would like to thank McGill Faculty of Dentistry, the Canadian Institutes of Health Research (CIHR), and the Fonds de la Recherche en Santé du Québec (FRSQ) for their financial support.

I acknowledge that some of the data used in this thesis were obtained from Canada Citizenship and Immigration and Canadian Institute for Health Information for academic research purposes.
ABSTRACT

Understanding culturally related health values and identifying ethnically specific health seeking pathways can help health care providers supply culturally competent services and enhance cooperation with patients of different backgrounds. Cultural competency training, notably through cultural awareness courses, promotes understanding of the impact of social factors on illness and thus prepares medical and dental students to better serve their patients. Cultural awareness can also help preventive health programs fit community needs and cultural contexts.

Despite the fact that Chinese immigrants are the fastest growing ethnic minority in North America, few studies have been published on their beliefs and health-seeking behaviours following immigration. We thus lack information on how Chinese immigrants regard dental health and manage their dental problems. **Objective:** The aims of this study were to explore how oral illness is viewed by Chinese immigrants in Montreal, Canada and how they manage dental problems. **Methods:** We conducted a qualitative research study based on semi-structured, one-on-one interviews and thematic analyses of the transcribed interviews. Twelve adult Montreal Chinese immigrants with a high level of education participated in the study.

**Results:** Chinese immigrants in Montreal have a good understanding of dental caries in terms of its etiology, process, and ways to prevent and treat it. It thus seems that there is no major cultural barrier between this type of immigrant and oral health care professionals in regard to dental caries. However, we also observed that traditional beliefs and medications coexist with scientific dental knowledge and professional treatments concerning problems such as gingival swelling, gingival bleeding, and bad breath. In the case of gingival swelling, for instance, participants identified etiological factors that referred to both cultures: local factors referred to oral hygiene and were related to scientific culture, whereas general factors referred to traditional knowledge (“internal fire”). Chinese immigrants’ dental health seeking pathways include self-treatment, consulting a dentist in Canada or in China during a return visit, and obtaining
Chinese traditional medicine. The dental health seeking pathways varied depending on the circumstances. For dental caries and other acute diseases such as toothache, Chinese immigrants prefer to consult a dentist. For chronic diseases, some of them rely on self-treatment or an alternative treatment such as traditional Chinese medicine. The language barrier, financial problems and lack of trust are the main factors affecting Chinese immigrants’ access to dental care services in Canada. Former bad medical or dental experience among Chinese immigrants causes a loss of trust in Western medicine and dentistry and influences the decision to seek alternative treatments.

**Conclusion:** This study suggests that, in order to facilitate dentist-patient communication, oral health professionals should be informed of immigrants’ representation of oral health and illness, and that Chinese immigrants should be provided with basic scientific knowledge.
RÉSUMÉ

Comprendre comment les valeurs culturelles peuvent être reliées à la santé et identifier la manière dont le contexte ethnoculturel influence le recours aux soins peut aider les professionnels de la santé à dispenser des soins adaptés aux profils socioculturels de leurs patients. La formation orientée sur la compétence culturelle, notamment par l’entremise de cours visant la sensibilisation aux différences culturelles, peut améliorer la compréhension de l’impact des facteurs sociaux sur la santé et la maladie auprès des professionnels et des étudiants en médecine dentaire. Une sensibilisation au contexte culturel peut soutenir le développement de programmes d’interventions de santé répondant mieux aux besoins et aux attentes des diverses communautés.

Malgré le fait que les immigrants chinois constituent le groupe ethnique dont la progression démographique est la plus rapide, peu d’études ont porté sur leurs croyances relatives à la santé et sur leurs comportements en matière de recours aux soins suite à leur expérience d’immigration. Nous constatons donc un manque d’information sur la manière dont les immigrants chinois conçoivent la santé dentaire et font face à leurs problèmes de santé dentaire.

Objectif: Le but de cette étude est d’explorer les perceptions des maladies bucodentaires des immigrants chinois vivant à Montréal et de comprendre leurs comportements à l’égard de la santé bucodentaire. Méthodologie: Nous avons mené une recherche qualitative. Douze entretiens individuels semi-dirigés ont été conduits auprès d’immigrants chinois adultes ayant un niveau de scolarité élevé et résidant à Montréal.

Résultats: Les immigrants chinois montréalais ont une bonne compréhension de la carie dentaire en terme d’étiologie, de processus pathologique, de prévention et de traitement. Il semble n’exister aucune barrière culturelle majeure quant à la carie dentaire entre les professionnels de la santé bucodentaire et les immigrants. Par ailleurs, nous avons observé que les croyances traditionnelles chinoises et l’automédication s’intègrent simultanément aux savoirs scientifiques biomédicaux et aux traitements conventionnels prescrits par les professionnels de la santé bucodentaire. Ceci prévaut surtout dans le cas de la gingivite et de la mauvaise haleine.
Pour ce qui est de la gingivite inflammatoire, les participants à l’étude ont identifié des facteurs étiologiques divers, à la fois reliés à la culture scientifique biomédicale, par exemple l’hygiène buccale, et au savoir traditionnel chinois, dont notamment les facteurs plus holistiques (chaleur interne). Les trajectoires de recours aux soins bucodentaires des immigrants chinois varient selon les circonstances. Concernant la carie et les maux de dents, par exemple, les immigrants chinois préfèrent consulter un dentiste. Par ailleurs, concernant les maladies chroniques certains d’entre eux s’administrent eux-mêmes des soins ou ont recours à la médecine alternative ou traditionnelle chinoise. La barrière de la langue, les difficultés financières et le manque de confiance sont des facteurs importants qui affectent l’accès aux soins des immigrants chinois au Canada. Les expériences négatives reliées aux soins médicaux ou dentaires auprès des immigrants chinois affectent la confiance qu’ils éprouvent envers la médecine occidentale et la médecine dentaire et contribuent au recours aux traitements alternatifs.

**Conclusion:** Cette étude suggère, dans le but d’améliorer la communication entre dentiste et patient, que les professionnels de la santé bucodentaire soient sensibilisés aux représentations de la maladie et de la santé dentaire des immigrants chinois et que ces derniers puissent être mieux informés des connaissances scientifiques à cet effet.
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CHAPTER 1
Introduction

Culture is all knowledge and values shared by a society, affecting and conditioning perception, judgement, communication, and behaviours in a certain society [1]. Understanding the impacts of social and cultural factors on the health beliefs and behaviours of patients can help health care providers supply culturally competent services and enhance cooperation with patients from different cultural backgrounds. Additionally, it ensures that policy makers create preventive health programs to suit community needs and cultural contexts. However, comprehensive knowledge about the health of, and utilization of health services by, Chinese immigrants is limited. Few studies have been published on the dental health beliefs and dental health care-seeking behaviours in Canada.

1.1 Problem Statement and Motivations

Since the 1960s, immigration policy reforms have eliminated preferences for immigrants of European origin [15], and the Chinese have become the fastest growing ethnic minority population in Canada. Immigrants from China have comprised the largest subgroup among immigrants in Canada and in Quebec in the last three years.

Chinese people seem to suffer from oral health problems, as the prevalence of caries and periodontal diseases is high [52, 76]. Thus, Chinese immigrants in Canada may have oral health problems and may need dental treatments.

However, access to dental care may be difficult for Chinese immigrants. Possible reasons include a different culture, different beliefs related to health and different medical systems in Canada and in China [11].

We know relatively little about their oral health-related beliefs and care-seeking behaviours, although a few studies have been conducted in other Western countries [58, 62, 95] and in Hong Kong [75, 71]. In particular, Kwan [62] conducted interesting research in England through the
use of focus groups. It showed that Chinese immigrants believe in traditional remedies and do not trust dentists very much. However, we still lack information on how these immigrants regard oral health and how they define, prevent, and treat their oral health problems.

1.2 Objectives of This Thesis

Objectives of this thesis include: 1). Understanding Chinese immigrants’ oral and dental health beliefs. 2). Identifying oral and dental health care-seeking pathways among Chinese immigrants in Montreal.

1.3 Organization of This Thesis

It is composed of seven chapters. The structure is as follows: Chapter 1 is an introduction that covers the problem statement and motivations, the objectives of this research and the contributions of this research.

In Chapter 2, we introduce immigrant demography in Canada; the adaptation process of immigrants; health beliefs and behaviours among Chinese people.

In Chapter 3, we present the objectives of this study.

In Chapter 4, we describe methods and study design used in this study.

In Chapter 5, we present our results as two articles. Article 1 is about the way oral illness is viewed by Chinese immigrants in Montreal, Canada. Article 2 presents the oral health care-seeking behaviours of Chinese immigrants in Montreal, Canada.

In Chapter 6, we include discussion of, and recommendations for, future work.

In Chapter 7, we draw conclusions.
CHAPTER 2
Background and Literature Survey

Today the movement of people around the globe is increasing in magnitude and frequency [103]. In order to help immigrants settle down and improve immigrant life, studies about migration have become more important than before [49].

2.1 Immigrant Demography in Canada

Canada accepts approximately 250,000 new immigrants (0.7% of the Canadian population) from all over the world each year. Thus, immigrants represent a large part of the population in Canada, and it was reported in 2001 [27] that 18% of the population were born outside of the country.

Pioneer immigrants in Canada came mainly from Europe. In 1967, Canada adopted a new immigrant selection system based on points to select skilled immigrants and business immigrants regardless of racial or ethnic origin [15]. Since then, the origin of immigrant streams has shifted away from Europe towards Caribbean, Asian and other non-European origins. The percentage of immigrants from Asia and Latin America has risen steadily, and Asia has become the major source of immigrants in the past decade [30].

Immigration from China rose after 1989, when Canada allowed Chinese students studying in Canada to immigrate [15]. Chinese immigration into Canada peaked in 1998 due to Canada’s greater emphasis on adopting economic immigrants and China’s growing middle class [69]. Immigrants from China are still continuing to arrive. In the past six years, China has been the largest source of immigrants to Canada and one of the main sources of immigrants to Montreal. The main source countries for immigrants to Montreal [29] are shown in Figure 2–1.

Immigrant structure in Canada has also changed since the government amended Canada’s immigration policy and introduced the point system in 1967 [44]. The new selection system takes into account factors such as education, experience, occupation and demographics. As a
Figure 2–1: Permanent Residents in Montreal by Top Source Countries

As a result, the number of skilled immigrants has increased in the past ten years in Canada. Compared to 1993, the number of skilled workers in 2003 has doubled [30]. Figure 2–2 shows immigrants to Montreal by category in the past three years [29].

Immigrants in Canada tend to have a background of high levels of education and relatively high language ability. In 2002, nearly 80% of new immigrants 15 years of age or above in Montreal could speak at least one of the official languages, and 36.16% of these new immigrants were bilingual. In fact, the proportion of immigrants holding a university degree is significantly higher among recent immigrants. In 2002, nearly half of new immigrants arriving in Montreal held a Bachelor’s or a higher degree. Overall, more than 70% of Montreal’s new immigrants have a certificate, a non-university diploma, or a Bachelor’s, Master’s or doctoral degree [28].
Canadian immigrants are extremely heterogeneous with respect to source country, length of stay, category of migration and socioeconomic status and culture. There is limited information on immigrant subgroups. For example, we do not know the social demographics, socioeconomic status and education level of immigrants from China.

2.2 Immigration Adaptation

Living in a new country, immigrants have to face a range of challenges including different languages or mainstream norms and values in the host country. Immigrants put a lot of effort into the process of changing their lifestyle in order to feel well and to be able to deal with everyday social situations. This process is called immigration adaptation [48]. It is a multifaceted process. Critical components of immigration adaptation include psychological adaptation and sociocultural adaptation. Psychological adaptation involves psychological and behavioural aspects. Sociocultural adaptation is related to the relationship between individuals and their new
cultural context. Moghaddam argued that adaptation should include positive feelings and satisfaction with one’s situation, development of positive interpersonal relations with members of the host culture, and some level of effectiveness in carrying out the necessary task at hand [90].

2.2.1 Process of Immigration Adaptation

Usually, immigrants experience different phases of adaptation: resettlement, acculturation [87]. Resettlement, the first and necessary stage, means finding a place to live, registering children or themselves with a school in order to study, opening a new bank account, applying for a health card, a driver’s licence and other important documents that are all urgent and vital for new immigrants.

The second stage, acculturation, is the process of adopting new ideas or the behaviour patterns of the surrounding culture, and assimilating into an existing cognitive structure. There are four types of acculturation: assimilation, integration, separation and marginalization. It depends on how individuals deal with keeping or letting go of their culture in light of conflicting cultural values. Goldberger [42] theorized the model of acculturation shown in Figure 2–3.
The adaptation model is not a linear model for stages of progress. Different groups of immigrants and ethnic populations use different strategies. Some researchers [96] argued that this model is out of date because cultures are not as isolated as before. Global culture, technology, and information dissemination influence the spread of cultural norms.

2.2.2 Influencing Factors on Adaptation

There are several factors affecting adaptation. The first is the ability to understand and use the host country’s language and adopt mainstream norms and values. Mastering the receiving country’s language is a key element in the foreign culture. It is related to the willingness, opportunities, abilities and need to actually acquire elements of that culture. Speaking the host country’s language enables an immigrant to make better use of health and other services [12]. For example, illiterates are not able to understand the written information about medical conditions and may have difficulty following medical prescriptions. Medical prescriptions may also be wrongly interpreted [111]. Language barriers also prevent immigrants from participating in socioeconomic events, and taking advantage of information sources, especially in relation to the job market [2].

The second factor is the compatibility of educational credentials and the transferability of job skills. New immigrants have difficulty in being admitted on the basis of their education and skills. Compared to their departure status in the country of origin, immigrant status in a new country may decline, and regaining the original status may be difficult. Most immigrants experience underemployment, because it takes a long time to overcome the barrier of having credentials in trades and professions recognized [6]. Hence, immigrants are usually highly motivated, ambitious and ready to work longer and harder than non-immigrants [20]. It has been reported that better adapted immigrants were those who were more satisfied with their employment conditions. Involvement in every aspect of life is conditioned by an immigrant’s performance in the labour market [6]. Immigrants who experience difficulties in finding a job are prone to lose their self-esteem [8]. Work-related problems and low socioeconomic status
were also found to be associated with depressive symptoms and stress in various groups. Employed parents are better able to maintain their role as providers. Hence, young immigrants living in a family with employed parents are better adjusted than those youth whose parents are unemployed [53].

The third factor is the social network. Socialization enables the individual to achieve satisfaction in his or her social or personal activities. The social network can be built up before immigrants arrive in their new country, and makes newcomers feel more comfortable. New immigrants may get financial assistance, temporary housing, employment suggestions and emotional support from relatives, family members and friends [32]. However, Choldin pointed out that this kind of network might restrict recent immigrants to within the minority ethnic culture, rather than them entering the society's culture as a whole. Immigrants without a social network in the new country tend to travel more frequently to other parts of the country, and this may help them to learn and understand the leading culture [24]. Chinese immigrants are more likely to depend on close family members and relatives to help them resolve their resettlement problems [25]. To a certain point, this hinders the adaptation process for Chinese immigrants.

Immigrants can benefit from activities in church congregations and non-profit organizations in order to construct new social networks within their cultural communities and within the host society [7]. Churches and other religious institutions represent one of the most important sources of support for the practical problems faced by immigrants. Many immigrants obtain help in finding housing and employment, and also in learning and improving their language skills. Maintaining cultural continuity and obtaining material assistance attract immigrants to participate to churches activities [9]. Self-protection from the hostility of the native-born population is another reason why new immigrants are highly motivated to start by joining a church [37].

The influence of demographic characteristics on the adaptation process is also important. Indeed, the stage in the life course at which a person immigrates is critical to his or her subsequent adaptation. The younger the immigrant is, the longer the immigrant will stay in the
receiving country, and the easier the adaptation will be [68]. In addition to age, gender also influences the adaptation process, as male and female immigrants may not adapt in the same manner [93]. Women tend to adapt earlier than men, as men are significantly more traditional than women [108].

Another factor, culture, plays a critical role in adaptation as it shapes one’s conceptions of the self, and the rigidity with which groups are perceived as “us and them”. Culture shock reflects conflicts between traditional culture and mainstream culture. For example, Chinese culture emphasizes interdependence and control, interpersonal harmony, family cohesion and filial loyalty. On the contrary, personal freedom and the development of autonomy are stressed in Western culture. As a consequence, Chinese immigrants may feel psychological stress and dilemma in their work, study and daily life [97].

2.2.3 Evaluation of Adaptation

Many variables are used in measuring adaptation, such as duration of residence, age at immigration, and language in which the survey is managed. A sense of relative satisfaction is also regarded as an important indicator of psychological adaptation [43]. Making new friends in the new country is viewed as a sense of adaptation. Furthermore, marriage patterns are considered to be one of the best indicators of the level of immigrants’ assimilation into the dominant culture of their new country. High levels of intermarriage between races indicate different races respect and interact with one another. Economic immigrants who were admitted on the basis of their education and skills had higher odds of intermarrying [92].

Numerous scales have been successfully developed and used in measuring adaptation. Employment status is an important factor in understanding how individuals feel about their life in the new country. Employment-related experience and satisfaction with life, which measures satisfaction in different areas of life, are applied in research into psychological adaptation [107]. Economic adaptation is measured by annual income, the level of correspondence between the intended and achieved financial goals, and self evaluation of accomplishment in economic life [6]. Sociocultural adaptation is evaluated on a cultural adjustment scale [98].
However, we have limited data about measuring the adaptation of immigrants in regard to oral health beliefs and behaviours.

2.3 How Health and Illness are Viewed among the Chinese Population

Culture refers to the shared patterns, knowledge, meanings and behaviours of a social group [100]. Culture is a guide to understanding the norms of family life, birth, child-rearing, aging and death, and beliefs about health and diseases are an important part of it [91]. For example, they can impact on a person’s decision about whether to adhere to a treatment regimen, whether to return for a follow-up appointment, or whether to seek care from a dentist or other health care professionals.

Each culture holds its own health beliefs. Traditional Chinese health beliefs last for centuries. They are based on the concept of human beings as a microcosm of the universe in which environment can influence health and increase risk of disease.

There are three notions related to traditional Chinese health beliefs: yin-yang, qi and five elements. Dialectical concepts (yin and yang) or humours concepts (cold and hot) are often used in China. In this perspective, health is regarded as a dynamic equilibrium between yin and yang. Yin and yang represent human meteorological conditions and are the fundamental patterns for detecting and synthesizing clinical information. Cold, darkness, being stationary, passiveness, receptivity, tranquility, and quiescence are related to yin. Yang symbolizes heat, light, stimulation, excess, assertiveness, dominance, movement, arousal, and dynamic potential. Yin and yang are dependent on, and in opposition to, each other. Loss of balance between them causes diseases, but traditional medical treatment may re-establish the balance [40].

Another central concept of Chinese health beliefs is “qi”. Qi has little scientific meaning but for traditional Chinese medicine it is interpreted as a “life force” or “spiritual energy” [40]. Different qi are acquired from different resources and act differently: 1. Congenital qi is inherited from parents. 2. Acquired qi is provided by food and air. 3. Nutrient qi circulates and nourishes the body. 4. Defensive qi protects the body from illness. According to Chinese culture, it is vital to maintain the free flow of qi. Qi flows normally between the organs through twelve
main channels in the human body. As a consequence, traditional Chinese medical providers and Chinese patients practice many massage techniques to maintain its flow [40].

The five elements include metal, wood, water, fire and earth. Each of these elements is linked to one of five most important organs in the body. These organs determine the functions of all the other parts of the body, including emotions. The relationship between these five elements and important organs is illustrated in Figure 2–4.

This system is based on a complex physiological theory that explains the environmental influence on the human body and interactions among the body organs. It shows that the various bodily organs, the senses and the emotions and their functions in health and disease are linked [40].
According to Chinese health beliefs, there is no independent element that causes patient illness. Health and sickness are associated with both the overall configuration of a patient and the environment.

Patients’ attitudes towards oral health, oral health behaviour practices and habits, including service utilization, are influenced by cultural health beliefs [104]. Moreover, understanding cultural oral health beliefs helps health care providers in the production of oral health educational material, in promoting oral health and delivering care in multicultural societies [112].

Traditional Chinese health beliefs are widely spread and deeply ingrained among the Chinese, including Chinese immigrants [66]. Former studies have reported that many Chinese people, regardless of age and gender, think that dental disease is a part of life. According to Chinese immigrants in the UK, dental decay and periodontal diseases are inheritable and unpreventable, and loss of teeth in old age and in children is regarded as a nature phenomenon [62, 114]. Therefore, preservation of the primary dentition is believed to be unnecessary and gum bleeding is seen to be normal [114]. However, tooth loss in young adult is seen as undesirable [62].

Traditional physiognomy still exists and affects Chinese people [84]. For instance, “Missing incisors causes loss of wealth” or “people with ‘extra’ teeth have good fortune and wealth” is still popular among the Chinese population. Traditional Chinese health beliefs influence the perception of oral diseases in regard to periodontal diseases and oral mucosal diseases [71]. For example, periodontal diseases and oral mucosal disorders are considered as a loss of the balance of yin-yang, and “hot air” causes gum diseases [71]. Therefore, cooling teas are used by many Chinese to treat toothache, gum disease and other oral health problems [71].

According to Fuller [40], individual health beliefs depend on several factors. Individual personal experience is the primary influence factor. The second is the belief and experiences of those close to the individual. The third is the beliefs current in the cultural group. The fourth factor is childhood teaching and religious teaching. The most critical effective factors are personal experience and the views of others. Therefore, individual health beliefs are not stable [40].
With the development of oral health education, knowledge and awareness of oral and dental health seem to be increasing among the Chinese population today. Although surveys on oral health knowledge are scarce, the existing data from China show that the Chinese have a good understanding of dental caries in terms of its etiology, and ways to prevent and treat it. For instance, more than 90% of Chinese children and adults, aged 10 years or older, know that sugar is harmful to teeth [72]. Over half of the residents in the city of Wuhan know that fluoride may prevent dental caries [72]. In additional, the Chinese realize the importance of dental health. For example, most people in cities think that dental diseases are harmful to the body as a whole [72], and more than half of students paid attention to the appearance of their teeth, gums and halitosis [59]. Moreover, the Chinese take care to maintain their oral health. Brushing teeth and using toothpicks are common in China today, and 48% of Chinese adolescents in urban area use fluoridated toothpaste [55]. However, there is a gap between scientific knowledge and Chinese health beliefs. According to Chinese students, wearing dentures in old age is still regarded as inevitable [59]. Thus the promotion of oral health is critical because the prevalence of flossing and mouthwash use is low [61].

As immigration is a special experience for all immigrants, Chinese immigrants share the experience of resettlement, acculturation and assimilation with other immigrants. During these processes, immigrants adopt new cultural contexts [18]. It is documented that many Chinese immigrants hold oral health beliefs and attitudes that are mixed in the sense that they value both traditional Chinese and Western medicine [114]. They are satisfied with treatment outcomes for dental caries, such as fillings. On the other hand, as adult Chinese immigrants were born into a Chinese cultural environment, traditional Chinese oral health beliefs still influence adult Chinese immigrants and are deeply ingrained among Chinese immigrants [114]. Kwan reported that the majority of Chinese people in North-east England believed that it was natural to lose teeth in old age and that periodontal diseases were caused by “internal fire” [62]. These traditional health beliefs have been shown to remain strong among people in Hong Kong [60] and even among immigrants in Western countries regarding general [3, 22] and oral health [62].
Understanding different cultural health values is relevant for health care providers so that they may provide culturally competent services and cooperate with patients from different backgrounds. As a consequence, improving health care providers' awareness of cultural contexts has become a major trend in medical and dental education. Indeed, cultural competency training promotes students’ understanding of the impacts of social and cultural factors on a patient’s illness and behaviours. Additionally, identifying health values ensures preventive health programs that suit community needs and cultural contexts [39].

2.4 Access to Health Care among the Chinese Population

China has several kinds of health care services. These include private practitioners, collectively owned health facilities, community primary health care institutes, and hospitals. Hospitals are the backbone of the health care system. The hospital system is comprehensive in China. Health care providers in hospitals provide traditional Chinese medicine, Western medicine or a combination of traditional and Western medicine. Hospitals range from general to specialized hospitals, and provide inpatient, outpatient and emergency care services [117].

There are apparent differences in the geographic distribution of people per doctor and in the quality of facilities and services in different areas in China, especially between rural areas and big cities. Eighty percent of health resources are in the cities, where the level of health resources has reached that in developed countries [67]. Figure 2–5 demonstrates the number of doctors per thousand population in rural and urban areas in China and time trends of change [120]. Compared to China, Canada has fewer physicians: according to information from the Canadian Institute for Health Information, the average rate for practising physicians per 1,000 population was 2.1 [19]. There are no data about Chinese traditional health care providers in Canada.

2.4.1 Health Care System in China

In China, all health care providers and health care centres are open to the public. They are free to choose doctors, including specialists, and do not need an appointment. They also decide whether to choose traditional medicine or modern medicine [118].
Figure 2–5: Number of Doctors per Thousand Population

Generally, health care in China is based on a fee-for-service. The health care fee is low; therefore a large portion of the population can afford health care services. These services focus on prevention, public involvement and a balance between Western and traditional medicine [38]. However, the soaring costs of high technology and better quality services exclude poor people. This is an important issue in health care systems in China [101].

Before health care policy reform in 1986, civil servants and workers in public agencies, disabled military officers above a certain rank and college students could get full government insurance coverage from the general tax system for dental health care [50].

Since 1986, health care systems and social security have been undergoing reforms. The employees of state agencies and organizations, as well as veterans and university students are required to pay 5% of their annual income for their medical accounts and to pay 2-3% of their total wages to cover the medical expenses of retirees and employee dependents [117]. 80% of
dental services for college students, the employees of public agencies and veterans as well as retirees and employee dependents are covered by government insurance [50]. Workers at state and non-agricultural collective enterprisers receive workers’ or labour insurance through their employers. The insurance coverage could be for the worker’s dependents [117]. Those hired by private entrepreneurs and workers in private and foreign companies enjoy private health insurance purchased by the companies or individuals themselves [38].

Rural areas are significantly different from urban areas. In some parts of rural areas, people participate in a rural cooperative medical plan. This plan is financed from rural welfare funds and contributions from the peasants themselves. The cooperative medical plan aids peasants to access basic care, regardless of their economic status. However, as few as 5% of rural residents are covered by cooperative medical care services. With non-agricultural employment increasing, rural areas are becoming more like urban areas in their health care requirements [10].

Traditional medicine and modern medicine are given equal respect and place in the health care system. They have their own separate departments at different levels of the public health ministry. Both have their own medical schools, hospitals and research institutes [47].

In addition, traditional medicine has been integrated into Western medicine education in China. In all Western-medicine schools in China, approximately 10-15% of curriculum time is assigned to traditional Chinese medicine. All doctors have some traditional medicine training. Other health care practitioners, such as nurses, also get training in many forms of traditional medicine such as acupuncture and acupressure [47].

Integration of traditional medicine into modern medicine is guided by health officials trained in modern medicine; their goal is to harmonize both medicines [14]. In daily practice, traditional medicine collaborates with modern medicine. It is easy to see that modern medicine is practised together with Chinese traditional medicine at every level of health care. Without counting self-medication with traditional drugs, nearly 40% of health care depends on traditional Chinese medicine [46]. Western-trained doctors view traditional medicine as a useful
and safe method of treating patients with chronic or intractable illness. Thus, 40% of prescriptions given by Western medicine practitioners are related to traditional medicine. Similarly, in the traditional hospitals, 40% of all prescriptions are for Western medicine [46].

2.4.2 Traditional Chinese Medicine

Traditional medicine is an application of cultural health beliefs to explain and manage health and illnesses. Traditional Chinese medicine has been practised for over 2000 years. It has its own unique theoretical and practical access to the treatment and prevention of diseases. The theory and practices have internal logic and consistency that cannot be explained in modern medicine [23].

Five kinds of methods are practiced in Chinese traditional medicine in China. These include herbal remedies, acupuncture, acupressure, massage, and moxibustion [23].

The diagnosis and treatment process consists of listening to the patient’s history, observing the patient’s tongue and palpating the patient’s pulse. Based on the concept of holistic health and balance theory, traditional medicine providers make a diagnosis and prepare a treatment plan. Practitioners attempt to identify the internal imbalance that leads to illness and then try to restore the balance. As an example, many foods and food groups are classified into yin-yang (cold-hot). If a disease is believed to be caused by experiencing too much yang (hot), health providers will use yin (cooling herbal tea) to counterbalance yang [40].

Traditional medicine is one of the most important parts of China’s health care system. Compared to 0.94 million tonnes of Western drugs, 1.05 million tonnes of traditional Chinese herbs were produced in China in 1994 [117]. It is documented that 200 million outpatients and almost three million inpatients are treated annually by hospitals practising traditional Chinese medicine. Overall, 95% of general hospitals in China have traditional medicine departments, which treat about 20% of outpatients daily [14].

As Chinese traditional medicine uses natural plants or other natural forces to adjust and maintain human internal balance, the Chinese believe that traditional medicine has fewer side effects. Elderly and poor Chinese in Hong Kong rely on traditional medicine to manage their
health problems, and only try modern medicine when traditional medicine does not seem effective [21].

The majority of Chinese people consider both traditional Chinese medicine and Western medicine to have strengths and weaknesses. As traditional Chinese medicine emphasizes preventive medicine and health maintenance, it is regarded as more effective for immune conditions, chronic illness, or when the etiology is unknown. Chinese traditional herbs are believed to work quite slowly. Modern Western medicine is regarded as more powerful but sometimes too powerful with significant side effects [47]. People make decisions according to the specific type of illness. If patients consider they suffer from milder illness such as a cold, cough or they need alternative treatments, they prefer to look for traditional medicine. In other cases such as acute conditions or when the etiology is known, modern medicine is chosen [64].

Nowadays, there is a shift away from traditional medicine towards modern medicine in young and educated Chinese. More and more, younger, educated people prefer to use modern Western medicine because they believe it is established on scientific theory and it requires less frequent visits. In addition, modern Western medicine offers high-tech examinations, diagnoses and treatment services [17].

However, many studies have shown the clinical effectiveness of traditional Chinese medicine [115, 85, 102, 31, 70]. Traditional Chinese medicine provides a more personalized and pleasant patient-provider experience. Therefore, many Chinese in China would prefer to seek out traditional Chinese medicine providers. The Chinese government also gives a lot of support to developing traditional medicine [47].

2.4.3 Oral Health Services in China

In China, stomatology is a commonly accepted term for oral health services. The stomatology team is comprised of stomatologists and middle-level dentists, dental nurses, and dental technicians. Patients can obtain oral health services from these team workers in state-owned hospitals or in private dental clinics [72].
The educational backgrounds of these oral health care providers are different. Stomatologists usually complete 5 to 6 years of university training. The programs cover 3 to 4 years of general medical studies, 1 year of theoretical and experimental courses in dentistry, and 1 year of practice in dental hospitals. A stomatologist usually holds a Bachelor of Medicine degree. Middle-level dentists receive three years of training in the more than 30 schools offering training for health care workers [72].

Dental technicians need to complete 3 years of training in schools for health care workers. After graduation, technicians usually work in large hospitals or clinics preparing crowns, dentures and bridges. Dental nurses work with stomatologists. These dental nurses first receive 3 years of training in a school for health care workers, then receive on-the-job training from stomatologists. Besides dental knowledge, dental nurses have the same knowledge and skills as other medical nurses. Dental nurses can work in oral surgery departments and dental clinics [72].

Government supports almost all dental hospitals and dental clinics in general hospitals. These dental services are open to the public. Patients do not need to make an appointment, and have the right to choose general dentists or specialists. Private dental clinics are more common in towns and small cities than in big cities [72].

Public health bureaus in cities and in rural areas regulate oral and dental health services in China. Basic dental health care services (fillings and tooth extractions) are covered by medical insurance, but orthodontics and dental prostheses are not. People working for the government or in state-owned institutions and companies usually enjoy basic oral and dental health insurance in appointed hospitals. Other patients need to pay for the services by themselves [72].

The distribution of oral and dental health providers is unequal. Generally, big cities and urban areas have more providers than rural areas, and more oral and dental services are obtainable in economically developed areas. For instance, in urban areas there are nearly 1.5 university-trained stomatologists per 100,000 population. However, in rural areas more than half of township hospitals do not offer dental services [72].
Stomatology is a blend of traditional Chinese medicine and Western-style dentistry [82]. Providers apply knowledge and skills related to dentistry to treat patients. For example, fillings, root canal treatments and extractions are part of the daily work. Traditional Chinese medicine, such as acupuncture and herbal remedies, can also be seen in dental treatments. Acupuncture is the most common traditional medicine treatment used in dentistry in China. For instance, it is usually applied to treat Temporary Mandible Joint Disorder, facial pain [34] and acute dental pain [35].

Chinese medicine agents are also used as bactericidal agents. For example, the Chinese medicine agent, Jieeryin, has been found to be an ideal irrigant for ultrasound, and conforms to the principles of biology. It can kill anaerobes in infected root canals effectively [119].

In Canada, dental health care teams are little different from those in China. Besides dentists themselves, dental hygienists, denturists, dental therapists and dental assistant also provide services to patients. In contrast to dental services in China, dental patients in Canada need to make an appointment to see a dentist. Oral health care in Canada is not defined as an insured benefit. Human resources for dental health care providers in Canada are more advanced than those in China. For instance, population per dentist and per dental care providers were 1805 and 904 respectively in 1999 [65].

2.4.4 Caries and Periodontal Diseases in China

There are limited data about the prevalence of periodontal diseases in China. Generally, dental health is poor among Chinese people as the prevalence of caries and periodontal diseases is high. According to the report from the second national survey in China, 76.6% of children at age 5 were affected by dental caries and mean dmft was 4.5 [110]. Gingival bleeding and calculus were frequent in all age groups [110]. In comparison to China, dmft in Quebec was 1.77 at age 5 [16]. Furthermore, recent surveys have revealed that there were no significant changes in the prevalence of caries in China [121, 55].
2.4.5 Oral Health Care-seeking Behaviours among the Chinese Population

Health care-seeking behaviour is a concept used to describe the actions that a person takes when he or she is sick. Surveys on oral health care-seeking behaviours among Chinese are relatively few. According to existing data, the oral and dental health care access rate is still low among the Chinese population [116], in particular because traditional Chinese medicines are also used in managing oral mucosal lesions and periodontal problems [83]. Researchers reported that in China, only 15% of urban residents and 5% of rural residents visited a dentist when they had dental problems [105]. Lo reported that more than half of the elderly and a quarter of adults had not been to see a dentist for 3 years or more. Less than 20% of people 35-44 years old received regular dental check-ups and maintenance [74]. No perceived need is the most common reason for not seeing a dentist [73]. In China, self-treatment of oral diseases is common in both urban and rural areas [105]. In Hong Kong, many adults prefer to seek traditional remedies for dental problems such as gum swelling or an abscess. Using “cooling” teas to adjust an imbalance of yin-yang to treat gum disease and other oral health problems is popular [71]. Many people thus seek dental care only when symptoms arise, such as toothache and cavities [59]. This habit remains unchanged following migration. For instance, Kwan reported that many Chinese immigrants in the UK went to see a dentist only when they had toothache [63]. The most common treatments received in China are fillings, extractions and dental prostheses [73]. Limited studies on people’s oral health knowledge, attitudes and behaviour, as well as on dental treatment needs and access to dental health care services have been conducted in China [72].

Cultural beliefs about health play a meaningful role in determining an individual’s health behaviours, including access to health care services [99]. As traditional cultural beliefs view dental decay and periodontal diseases not as diseases but as an imbalance of yin-yang and the cause of pain, elderly Chinese in the UK and Hong Kong have a low level of dental awareness. Some even recognize tooth loss as an opportunity to avoid pain. The majority of Chinese immigrants in the UK doubt that dental advice and treatments can prevent dental diseases. They
are less used to routine dental care and professional dental health care services than are other races living in the UK [62].

Fuller also mentioned that the individual tends to give credit to the health care system in which he or she is well-known, and which fits in best with the individual’s health beliefs [40]. Ma also explained that in the US, some Chinese immigrants do not see doctors due to unfamiliarity with the US health care system and lack of trust in Western medicine. In order to manage health problems, some Chinese immigrants in the US travel to their country of origin for care. Some even rely on alternative health resources or self-care [78].

For poor people, financial issues are pointed to as major problems preventing poor people from seeing a health provider. According to Kim’s study, a lack of funds is the main barrier to access by immigrants to dental care services in New York [57].

In addition, trust plays an important role in the utilization of health care. Mistrust is one of the major barriers for patients in attending to health care. Kwan and William revealed that older Chinese in the UK use dental services less because they have less trust in dentists from a different cultural background, and have difficulty finding a dentist of Chinese origin [63].

Besides the influence factors mentioned before, the language barrier has long been identified as a major obstacle to immigrants for receiving appropriate health care. It can adversely affect the quality of care [109]. Woloshin reported that people who cannot speak the host country language were less likely to receive important preventive services [113].

As numerous factors can influence access by individuals to health care, understanding and identifying oral health care-seeking pathways are essential for improving the oral health of immigrants. In addition, information about health care-seeking pathways can help health care policy makers to develop culturally appropriate health care provision [45]. However, we do not have much knowledge about oral health care-seeking behaviours among immigrants to Canada who are from China.
2.5 Conclusion

The Chinese have become the fastest growing ethnic minority population in Canada. Im­migrants from China have comprised the largest subgroup among immigrants in Canada and in Quebec in the last three years.

Chinese people seem to suffer from oral problems, as the prevalence of caries and peri­odontal diseases is high. Thus, Chinese immigrants in Canada may have oral health problems and may need dental treatments.

However, access to dental care might be difficult for Chinese immigrants. Possible reasons include a different culture, different beliefs related to health, and different medical systems in Canada and in China.

We know relatively little about their oral health-related beliefs and care-seeking behaviours, even though a few studies have been conducted in other Western countries [58, 62, 95] and in Hong Kong [75, 71]. In particular, interesting research was conducted by Kwan [62] in England through the use of focus groups. It showed that Chinese immigrants believe in traditional remedies and do not trust dentists very much. However, we still lack information on how these immigrants regard oral health and how they define, prevent, and treat their oral health problems.

Understanding the impact of social and cultural factors on patients’ health beliefs and behaviours can help health care providers supply culturally competent services and enhance cooperation with patients from different cultural backgrounds. Additionally, this ensures that policy makers create preventive health programs that suit community needs and cultural contexts. However, comprehensive knowledge on Chinese immigrants’ health and utilization of health services is limited as few studies have been published on this subject.
CHAPTER 3
Objectives

Given that the Chinese comprise the largest subgroup among immigrants in Canada and in Quebec, and that there are no data about Chinese immigrants’ oral health-related beliefs and care-seeking behaviours in Canada, our principal objectives in this study include: 1). Understanding Chinese immigrants’ oral and dental beliefs. 2). Identifying oral and dental health care-seeking pathways among Chinese immigrants in Montreal.
CHAPTER 4
Methods and Study Design

Qualitative research is a useful method for identifying and understanding people's experiences, cultural values, beliefs, and perspectives [41]. The objective of qualitative research, also known as naturalistic research, is to understand a phenomenon through interpretation. Qualitative research has been successfully used to explore cultural values, beliefs and attitudes towards dental health services among Chinese immigrants from Hong Kong and Taiwan [62]. A study shows that qualitative research can increase understanding of oral health behaviours and emphasize the importance of patient-centred oral health education [106]. In this research, we used qualitative inquiry to discover the effects of immigration on Chinese immigrants' oral health beliefs and behaviours. This chapter has four sections: methodological principles, sampling strategies, data collection, and data analysis.

4.1 Methodological Principles

Our approach is based on Phenomenology, which is aimed at a deep and rich understanding of the meaning, structure and essence of human daily life. “It helps in capturing and describing how people experience some phenomena, how they perceive them, describe them, feel about them, judge them, make sense of them and talk about them with others.” [94]. An in-depth interview is its basic method. The interview data should be firsthand experience [94].

4.2 Sampling Strategy

In this research, twelve Chinese immigrants from nine provinces of China were selected using a purposeful sampling technique. We focused on the effects of immigration on Chinese immigrant’s oral and dental health beliefs and behaviours. Due to the significantly higher proportion of economic immigrants, we only recruited economic immigrants in this study. Furthermore, as Chinese immigrants from China have strong traditions and culture background, the inclusion criteria for this study focused on those who were (1) first generation immigrants,
(2) born in China, (3) residing in Montreal, Canada, (4) economic immigrants, (5) aged 20 and over. Hence, the exclusion criteria include: (1) refugees, (2) those born in Hong Kong and Taiwan, (3) second and third immigrant generations. Deliberate attempts were made to obtain a heterogeneous sample that included recent immigrants who had arrived in Canada within the past 3 years, and immigrants living in Canada for more than 3 years. Both genders were invited to join the research.

Snowball or chain sampling was adopted to recruit the participants because it is a good way to locate information-rich key informants [94]. In this way, the study can focus in depth on relatively small samples. Figure 4–1 shows the snowball technique structure used in the recruitment of interviewees.

In order to identify rich informants, one of our researchers went to the largest Chinese community centre in Montreal’s Chinatown, which is supported by the Canadian government and aims to help Chinese immigrants overcome difficulties as well as enrich the cultural life of Montrealers by offering a concert series and quality activities. The researcher first joined weekend programs for Chinese immigrants. During this period, she tried to develop links with Chinese community members. Then she introduced the study to one of the Chinese community members who had lived in Montreal for nearly ten years. This person has presented, organized
and been enrolled in many Chinese community activities. This Chinese community member was very interested in research and health information. He was willing to help us obtain data about Chinese immigrants’ health beliefs and behaviours. He hoped this information could help health care providers understand the difficulties that Chinese immigrants face in Montreal. In addition, he wanted the Montreal, Quebec and Canadian governments to help Chinese immigrants overcome these difficulties. With his help, and the help of his friends and other Chinese community members, we recruited Chinese immigrants.

The sample consisted of 12 participants. The sample size was based on the principle of saturation, which means that the last interviews brought little original information and that no new insights were likely to be obtained by conducting additional ones [94]. Table 4–1 summarizes the demographic characteristics of the participants. It is important to note that all participants had a high level of education, as they were economic immigrants. All of them once lived in urban areas in China. The majority of them (10 participants) had no relatives or friends when they arrived in Canada. In the main, their social networks cover Chinese communities. They have few Quebec friends or friends from other countries. Despite a high level of education, all had low incomes (less than thirty thousand Canadian dollars per year) due to unemployment or short-term employment. Because of their difficulties in finding jobs, some of them undertook university studies in order to obtain better opportunities in the future.

4.3 Data Collection

A pilot study had been done to refine the researcher’s interviewing skills and methodology. Six responders were asked to participate in that study. Most of them fulfilled the inclusion criteria. Only two were Chinese immigrants from China, but they did not live in Montreal. The responders felt that they were interested in this research and they could understand the questions easily.

In our formal study, in order to protect participants as well as to ensure the interview results, the researcher explained to them the purpose, methods, and consent form. We promised that the data would only be used for research. Before each interview started, the participant
Table 4-1: Demographic Characteristics of the Participants

<table>
<thead>
<tr>
<th>Demographic Characteristics</th>
<th>Number of participants (N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td></td>
</tr>
<tr>
<td>20-40</td>
<td>6</td>
</tr>
<tr>
<td>41-70</td>
<td>6</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>5</td>
</tr>
<tr>
<td>Female</td>
<td>7</td>
</tr>
<tr>
<td>Years in Canada</td>
<td></td>
</tr>
<tr>
<td>0- 3 years</td>
<td>4</td>
</tr>
<tr>
<td>4- 8 years</td>
<td>6</td>
</tr>
<tr>
<td>8- 12 years</td>
<td>2</td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>10</td>
</tr>
<tr>
<td>Single</td>
<td>2</td>
</tr>
<tr>
<td>Education (degree)</td>
<td></td>
</tr>
<tr>
<td>College</td>
<td>1</td>
</tr>
<tr>
<td>University</td>
<td>11</td>
</tr>
<tr>
<td>Occupation</td>
<td></td>
</tr>
<tr>
<td>Unemployed</td>
<td>5</td>
</tr>
<tr>
<td>Employed temporarily part-time</td>
<td>2</td>
</tr>
<tr>
<td>Student</td>
<td>5</td>
</tr>
</tbody>
</table>

was requested to sign two consent forms approved by the Ethics Committee of the Faculty of Medicine, McGill University. The consent form was kept by a researcher and the participant was given a copy of it.

The principle investigator conducted one-on-one, in-depth, semi-structured interviews. Primarily unstructured questions allow respondents to talk freely about their immigration experiences, their views and personal experiences about health, illness, oral and dental health. Then we used an interview guide (Appendix A) to probe into how they deal with their illness and dental problems in Canada and how they used to do it in China before immigration.

Health beliefs and health seeking behaviors are complex phenomena. Many researchers developed theoretical models attempting to conceptualize people’s experience and beliefs with health and illness. Among these theoretical models, Andersen’s model of family health service utilization developed by Andersen in 1967 [4] is used as a guide to the existing work studying
health seeking behaviors. In Andersen’s model, there are three elements which decide the health seeking behaviors. These factors are predisposing influences, enabling factors and needs. Predisposing influences are the factors for example age and sex that make a person inclines to use medical care. For example, the elderly are more predisposed to use health care. Enabling factors refer to the financial factors which makes it possible for the person to access medical care. Finally, ”need” indicates the specific disability or disease indications that prompt a person to seek assistance [4].

our interview guide was developed based on health beliefs and behaviour models such as Andersen’s model of family health service utilization [4], as well as former research about immigration [87]. The interview guide was designed as a reminder to the participants that there were specific areas that the researchers were interested in, and areas that may be related to the research topic. In particular, it included themes such as: the participants’ definitions of oral illness; their methods of identifying oral illness; their perceived ways of managing and preventing oral illness. The Chinese language (Mandarin) was mainly used in the conversation, because Mandarin is the official and most common language in China. Talking with people who have the same mother tongue can help reduce the distances between conversers. The semi-structured interview guide was first written in English, and then translated into Chinese. The interviews were later translated into English.

The interview was arranged at a time that was convenient to the participant. It lasted from 80 to 120 minutes. The length of the interview depended on whether the researcher thought that comprehensive information had been obtained or a participant felt that he or she had provided all related information he or she had. Interviews were conducted at the participant’s home or another suitable setting, as the participants chose the places where they preferred to talk. We obtained permission from interviewees to use 2 audio recorders (Sony ICD-MS 515; Nexxtech 1401129) and took notes during the interviews. The reason for using two types of recorder was to make sure we did not lose any data. The participants were allowed to request the recorder be stopped at any time during interview.
After each interview, the researcher checked the recorders to make sure they had worked well. We also reviewed the interview notes to find whether we had uncertainty, or ambiguity. If we felt something was confusing, we went over it with the interviewee for clarification. Through this procedure, the reliability and validity of the data were enhanced [86].

In order to build trust and encourage the participants to talk about their experiences and beliefs, the researcher respected and followed Chinese culture. In addition, the interviewer took part in the participants' daily activities, such as cooking, shopping, family parties, birthday parties and so on. According to Chinese culture, young people should respect the elderly. Sending a gift to an elderly person is one of the ways to express respect for an elder. Therefore, in order to recruit an elderly Chinese immigrant who had experienced seeing a dentist in Canada, the interviewer prepared a birthday cake for him. Through these activities, participants treated the main investigator as their friend, and they were happy to share their personal experiences and beliefs with the researcher.

The researcher who conducted the interviews is a Chinese immigrant from China. This factor increased understanding of the language and culture of the participants. In addition, participants wanted to talk with the researcher as they thought the researcher had had the same experience as them. They perceived the researcher as one of their own, who could understand and share their stories. They also regarded the researcher as a friend who needed their help, rather than as a stranger who just wanted to take something from them.

The interview texts were translated into English by a bilingual Chinese-English researcher. Translations of selected texts were verified by another bilingual Chinese-English researcher. Then the accuracy of the transcripts was checked by the researcher and participants through a second interview.

In two cases, we decided to conduct a follow-up interview in order to complete data collection and/or verify the interpretation [86]. Through this process, we clarified some situations that participants described in their interviews. We also asked them to explain some terms they
used during the last interviews. In addition, we conducted 12 follow-up phone interviews to obtain more information about Vitamin C and gum bleeding.

4.4 Analysis

The data analysis included three main steps: (a) filling in a contact summary sheet; (b) coding; (c) reducing and interpreting data. As recommended by Miles and Huberman [88], the contact summary sheet was completed right after each interview in order to summarize the discussion, identify the main themes and, in some cases, raise new hypotheses. It also helped the researchers to identify methodological issues and prepare the interviews to come. For example, we summarized information about target questions for each interview, which helped us to decide whether we needed to conduct a follow-up interview and what kind of conclusion we could draw from each interview.

QSR NVivo 2.0 software was used to code and analyze the data. QSR NVivo 2.0 is qualitative software that is a useful tool for identifying provisional inferences from the texts. It can aid qualitative researchers to combine subtle coding with qualitative linking, shaping, searching and modelling. The software allows consideration of all relevant texts and easy modification of the broad themes.

We started with a list of codes based on our research questions. We then reviewed the codes, eliminating the less useful ones, combining smaller categories into larger ones or, conversely, subdividing large categories into smaller ones. Table 4-2 shows the final list of codes.

Each interview text was entered into the database and coded in its entirety, line-by-line or paragraph-by-paragraph by the researcher. We first labelled the interview text based on the codes list. Then we sifted and sorted pieces of marked data to detect and interpret thematic categorizations, such as information about oral health beliefs or oral health behaviours. We searched for similarities, inconsistencies and contradictions in our data. We generated conclusions about what is happening and why.
Table 4-2: A Final List of Codes

<table>
<thead>
<tr>
<th>Social Demographic</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>SD: Age, Gender, Family</td>
<td>1.1</td>
</tr>
<tr>
<td>SD: Current living area</td>
<td>1.2</td>
</tr>
<tr>
<td>SD: Education, Job, Income</td>
<td>1.3</td>
</tr>
<tr>
<td>SD: Former career, geographic location</td>
<td>1.4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Immigration Process</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP: Time, Reason</td>
<td>2.1</td>
</tr>
<tr>
<td>IP: Social network</td>
<td>2.2</td>
</tr>
<tr>
<td>IP: Experience</td>
<td>2.3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Health Beliefs and Behaviors</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>HB: Health beliefs</td>
<td>3.1</td>
</tr>
<tr>
<td>HB: Influence factors on health beliefs</td>
<td>3.2</td>
</tr>
<tr>
<td>HB: Health behaviors</td>
<td>3.3</td>
</tr>
<tr>
<td>HB: Influence factors on health behaviors</td>
<td>3.4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Oral Health Beliefs and Behaviors</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>OHB: Oral health beliefs</td>
<td>4.1</td>
</tr>
<tr>
<td>OHB: Influence factors on oral health beliefs</td>
<td>4.2</td>
</tr>
<tr>
<td>OHB: Oral health behaviors</td>
<td>4.3</td>
</tr>
<tr>
<td>OHB: Influence factors on oral health behaviors</td>
<td>4.4</td>
</tr>
</tbody>
</table>

We finally summarized and indexed the data by theme and subtheme, and organized them into tables and figures describing the participants’ representation of oral illness and the participants’ oral health care-seeking pathways. As different researchers spent time on systematically checking and discussing the different interview documents and interpretations, our findings were confirmed through triangulation; this means a finding is supported by independent measures of agreements with the finding, or at least no contradictions to the finding [88]. The process of analysis was recursive as well as interactive.

Furthermore, an ongoing system of checks was used to obtain more abstract and refined themes. Im and Choe successfully used this technique to identify themes common to the research participants [54].
We summarize our results as two articles. The first article (5.1) is about views of oral illness among Chinese immigrants in Montreal, Canada. The second article (5.2) is about Chinese immigrants’ dental health care-seeking pathways in Montreal, Canada.

5.1 Views of Oral Illness among Chinese Immigrants in Montreal, Canada

This article has been submitted to Community Dentistry and Epidemiology.

Views of Oral Illness among Chinese Immigrants in Montreal, Canada

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Abstract

Objective: The aim of this study was to explore how oral illness is viewed by Chinese immigrants in Montreal, Canada. Methods: We conducted a qualitative research study based on semi-structured, one-on-one interviews and thematic analyses of the transcribed interviews. Twelve adult Montreal Chinese immigrants with a high level of education participated in the study. Results: Chinese immigrants in Montreal have a good understanding of dental caries...
in terms of its etiology, process, and ways to prevent and treat it. It thus seems that there is no major cultural barrier between this type of immigrant and oral health care professionals in regard to dental caries. However, we also observed that traditional beliefs and medications co-exist with scientific dental knowledge and professional treatments concerning problems such as gingival swelling, gingival bleeding, and bad breath. In the case of gingival swelling, for instance, participants identified etiological factors that referred to both cultures: local factors referred to oral hygiene and were related to scientific culture, whereas general factors referred to traditional knowledge (“internal fire”).

Conclusion: This study suggests that, in order to facilitate dentist-patient communication, oral health professionals should be informed of immigrants’ representation of oral health and illness, and Chinese immigrants should be provided with basic scientific knowledge.

Key words: beliefs, traditional medicine, oral diseases, Chinese immigrants, Canada

Introduction

A society’s culture, or shared knowledge and values, affect and condition perception, judgment, communication, and behaviour. Understanding different cultural health values is relevant for health care providers in order to provide culturally competent services and cooperate with patients who have a different background. As a consequence, improving awareness of cultural context has become a major trend in medical and dental education. Indeed, cultural competency training promotes students’ understanding of the impact of social and cultural factors on the illnesses and behaviours of patients. Additionally, identifying health values ensures that preventive health programs will fit community needs and cultural contexts.

Chinese immigrants are the fastest growing ethnic minority in Canada, and they constitute the largest subgroup among immigrants in Canada. Yet, they are not a well understood minority group. In particular, we know relatively little about their beliefs and care-seeking behaviour related to oral health, even though a few studies have addressed this subject in other western
countries\textsuperscript{5,6,7} and in Hong Kong\textsuperscript{8,9}. Kwan\textsuperscript{10} for instance, revealed that the traditional beliefs of Chinese immigrants in England remain strong and may lead to misunderstandings or conflicts with oral health care professionals. However, we lack information on how these immigrants regard oral health, and how they define, prevent, and treat their oral health problems.

The purpose of this study was thus to explore the representation of oral health and illness among Chinese immigrants. Our long-term goal is to help dentists to become culturally competent and to facilitate their adoption of a patient-centred approach.

\textbf{Methods}

Between April and June 2005, we conducted one-on-one semi-structured interviews with first-generation, adult Chinese immigrants. We chose this qualitative approach because it is a relevant method for understanding people's experiences as well as cultural values, beliefs, and perspectives\textsuperscript{11}.

\textit{Sampling Strategy}

The research was undertaken in Montreal, Quebec, Canada. This city has three million inhabitants, and constitutes the second largest city in Canada. Eighteen percent of Montrealers were born in a foreign country, and 2\% were born in China\textsuperscript{12}. In this study, we recruited people who were (1) born in China; (2) first-generation immigrants; (3) residents of Montreal; (4) economic immigrants; and (5) aged 20 and over.

The sample consisted of 12 participants. The sample size was based on the principle of saturation, which means that the last interviews brought little original information and that no new insights were likely to be obtained in conducting additional ones\textsuperscript{13}. The principal investigator went to the main Chinese community centre in Montreal's Chinatown, and introduced the research to community members and volunteers. Community members introduced the investigator to Chinese immigrants who fulfilled the criteria for eligibility.

Table 1 shows the demographic characteristics of the participants. It is important to note that all participants had a high level of education, as they were economic immigrants. Despite this high level of education, all had a low family income (as defined by Statistics Canada's
low income cut-offs\textsuperscript{14}) due to unemployment or short-term employment. Because of their difficulties in finding jobs, some of them undertook university studies in order to obtain better opportunities in the future. Participants’ familial and social entourage was mostly constituted by Chinese immigrants, even though they were open to meeting non-immigrants and people from different cultural backgrounds.

Table 1. Demographic Characteristics of the Participants (N=12)

<table>
<thead>
<tr>
<th>Demographic Characteristics</th>
<th>Number of Participants (N)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age (Years)</strong></td>
<td></td>
</tr>
<tr>
<td>20-40</td>
<td>6</td>
</tr>
<tr>
<td>41-70</td>
<td>6</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>5</td>
</tr>
<tr>
<td>Female</td>
<td>7</td>
</tr>
<tr>
<td><strong>Years in Canada</strong></td>
<td></td>
</tr>
<tr>
<td>0-3 years</td>
<td>4</td>
</tr>
<tr>
<td>4-8 years</td>
<td>6</td>
</tr>
<tr>
<td>8-12 years</td>
<td>2</td>
</tr>
<tr>
<td><strong>Marital Status</strong></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>10</td>
</tr>
<tr>
<td>Single</td>
<td>2</td>
</tr>
<tr>
<td><strong>Education (Degree)</strong></td>
<td></td>
</tr>
<tr>
<td>College</td>
<td>1</td>
</tr>
<tr>
<td>University</td>
<td>11</td>
</tr>
<tr>
<td><strong>Occupation</strong></td>
<td></td>
</tr>
<tr>
<td>Unemployed</td>
<td>5</td>
</tr>
<tr>
<td>Employed temporarily part-time</td>
<td>2</td>
</tr>
<tr>
<td>Student</td>
<td>5</td>
</tr>
</tbody>
</table>

**Procedures**

Interviews were conducted in the participants’ houses, or in suitable public spaces chosen by the interviewees. The environment was quiet and the interviews were not interrupted by noise or any other disturbance. Before the interview started, each participant was asked to sign a consent form approved by the Ethics Committee of McGill University’s Faculty of Medicine. The interviews were conducted in Chinese by the principal investigator of this research. She
used an interview guide that was developed for this study and included themes such as: participant's definition of oral illness; their methods of identifying oral illness; their perceived ways of managing and preventing oral illness.

The interviews lasted approximately one and a half hours. They were audiotape-recorded and immediately transcribed verbatim by the principal investigator. The texts were then translated into English and reviewed by a bilingual Chinese-English speaker. In some cases, we conducted a follow-up interview in order to complete data collection and/or verify the interpretations.15

**Data Analysis**

The data analysis included three main steps: (a) completing a contact summary sheet, (b) coding and (c) reducing and interpreting data. As recommended by Miles and Huberman16, the contact summary sheet was completed right after each interview in order to summarize the discussion, identify the main themes and, in some cases, raise new hypotheses. It also helped the researchers to identify methodological issues and prepare for subsequent interviews.

The text of the interviews was coded in its entirety with QSR NVivo 2.0 software. We started with a list of codes based on our research questions. We then reviewed the codes, eliminating the less useful ones, combining smaller categories into larger ones or, conversely, subdividing large categories into smaller ones.

Finally, we summarized and indexed the data by theme and sub-theme, and organized them in a table describing how the participants view oral illness. As researchers systematically checked and validated the interpretations, the analytic process was recursive and interactive.

**Results**

All participants considered oral health to be a very important issue, and were open to scientific medical and dental knowledge. When asked to identify oral problems, they mentioned (a) dental caries; (b) gum swelling; (c) gum bleeding; and (d) bad breath. Gum bleeding, however, was not perceived as a real disease because it tends to disappear by itself and is considered a common problem (Table 2).
Table 2. How Chinese Immigrants View Oral Illness

<table>
<thead>
<tr>
<th>Terms used</th>
<th>Caries</th>
<th>Gum swelling</th>
<th>Gum bleeding</th>
<th>Bad breath</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Caries / Decayed tooth&lt;br&gt;• Worm tooth</td>
<td>• Gum swelling&lt;br&gt;• Tooth bed swelling</td>
<td>• Gum bleeding&lt;br&gt;• Tooth bed bleeding</td>
<td>• Bad breath&lt;br&gt;• Halitosis</td>
<td></td>
</tr>
</tbody>
</table>

| Symptoms revealing the problem | • Black spot<br>• Hole / Cavity<br>• Toothache | • Gum swelled<br>• Red gum<br>• Pain | Blood in saliva during tooth brushing and/or meal | Foul smelling breath |

<table>
<thead>
<tr>
<th>Perceived process</th>
<th>Continual - irreversible</th>
<th>Reversible</th>
<th>Reversible</th>
<th>Reversal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived etiology</td>
<td>• Lack of oral hygiene (bacteria, worm)&lt;br&gt;• Diet (sweet acidic food)&lt;br&gt;• Genetics</td>
<td>• Local factors: lack of oral hygiene&lt;br&gt;• General factor: internal fire</td>
<td>Lack of vitamin C</td>
<td>• Local factors: lack of oral hygiene, tooth problems&lt;br&gt;• General factors: food with strong smell, lack of sleep, bad eating habits</td>
</tr>
</tbody>
</table>

| Perceived means of prevention | • Oral hygiene<br>• Diet<br>• Regular check up | • Local factors: Oral hygiene (brushing & mouth rinsing)<br>• General factors: rest, avoiding stress, healthy diet (avoidance of hot food) | Vitamin C intake through fruit & vegetables; Tablets | • Oral hygiene<br>• Avoiding some food, good eating habit |

| Perceived treatment needed | Consulting a dentist | • Local factors: antibiotics; consulting a dentist<br>• General factors: traditional herbs (Xiguashuang) | Self treatment: Vitamin C intake (Fruit & vegetables; Tablets) | • Oral hygiene<br>• Avoiding some food, good eating habit<br>• Consulting a dentist |
**Dental Caries**

The majority of participants used both scientific ("caries", "decayed tooth") and traditional terms ("tooth worm") to name dental caries. A minority of them, however, only used the traditional way and described the holes in teeth as "tooth worms". Participants agreed that a black spot on the surface of the tooth was a sign of early dental caries. They perceived caries as a continuous and irreversible process that leads to a cavity, toothache, and ultimately the destruction of the tooth. They would therefore suggest conducting self-examination with a mirror in order to identify early symptoms, or asking a friend to check the teeth.

* Dental caries begins with a tiny black spot on the tooth’s surface. When a black spot develops, dental enamel is damaged. Without proper methods to control the spot’s development, dentine will be damaged. If the situation continues, the tooth can become infected. (G) [Translation]

  Early dental caries cannot recover or heal. You can control the dental caries in the early stage. You can see the dental caries. Of course, there are some parts that are difficult to check. When you find a black spot, you should clean the tooth very carefully. Early dental caries can be controlled. What I mean is you can see a dentist. (F) [Translation]

According to the participants, caries is related to diet, especially acidic or sweet food such as candy or sugar. They also perceived bad oral hygiene as a risk factor because it leads to an accumulation of bacteria or worms. In addition, some interviewees also mentioned genetics as a potential etiological factor.

* Sweet foods may be related to dental caries. My first son does not like to eat sweet foods. He does not like to eat sugar; cookies; cakes. I believe that the reason he gets dental caries is because of poor oral hygiene. My third son likes to eat sugar. His dental caries are caused by the sugar. (D) [Translation]

  Do not eat food or highly acidic foods or foods rich in carbohydrates at night, especially before sleeping. It is better not to take foods with too much acid or milk before you sleep. It
will hurt the teeth. Fruits. Apples and other fruits. Others include bread and milk. After eating these kinds of foods, you need to clean your teeth. (B) [Translation]

I had dental caries. I think dental caries may be related to inheritance. My mom’s teeth were not good. Therefore, I think dental caries are related to inheritance. (L) [Translation]

In agreement with their perceived etiology of dental caries, participants considered good oral hygiene as an important way to prevent dental caries. They regarded the individual as the person responsible for protecting his or her teeth from caries through brushing and flossing. A traditional method, rinsing the mouth with cold boiled water or salted water, was also seen as a good way to prevent caries and as complementary to other hygiene measures and diet.

Every morning, I rinse my mouth with cold boiled water. I brush my teeth after I finish my breakfast. I think teeth brushing should be done after eating food. It is good for the teeth. After lunch, I use dental floss to clean my teeth. I also rinse my mouth. After dinner, I repeat the same thing I do at noon. (A) [Translation]

In the morning, I use salt water to rinse my mouth. I think salt water can kill bacteria and clean my mouth. This is what I think. I do not know whether it works or not. It is the traditional Chinese way to clean the mouth. I do not know where I got this from. Then I brush my teeth. I brush my teeth twice a day. I usually do it after finishing my breakfast and before going to bed. (B) [Translation].

As dental caries was perceived as an irreversible disease, the participants thought that consulting a dentist was an essential way to manage dental caries. According to them, early treatment of caries would allow them to keep their teeth and fillings longer.

A regular check up is important. Routine examination is very important. Without routine check ups, a small spot will become a big spot. (H) [Translation]

Regular check ups are important. I went to see a dentist in China almost every three years. Even though I had no symptoms, I still asked the dentist to do the total examination on me. Routine examination is very important. Without routine check ups, a small spot will become a
big spot. Then it will become a big hole and cause pain. This kind of tooth is very easily broken.
If the spot is small, the dentist fills it. The tooth can be kept for a long time. (B) [Translation]

**Gum Swelling**

As for dental caries, participants used both scientific ("gum swelling") and traditional terms ("tooth bed swelling") to describe gingival inflammation. In addition to the swelling, participants identified redness of the gum, mobility of a tooth, and pain as other symptoms. They also explained that it is possible to distinguish toothache from gingival pain: they pointed out that, in the case of gingival swelling, food is not the source of pain and is not an irritant.

_The gum is red and swelling. Tooth bed swelling. You can see it and feel it by yourself I can tell the difference between toothache [from dental caries] and gum infection gum swelling I cannot explain why that tooth had pain. It was not related to eating foods. (J) [Translation]_  

_My gingiva swelled. I could see it. My wife also noticed it and commented on it...I had a toothache...my tooth became loose. (E) [Translation]_  

The participants perceived gum swelling as a reversible illness that could be caused by local factors (bad oral hygiene), and general factors ("internal fire"). Internal fire was described as a "fire" existing in the human body due to stress, lack of sleep, and an unhealthy diet such as an excess of "hot food" ("fried food", meat, "spicy food"), or a lack of fruit and vegetables.

_ Nervousness, pressure, depression: all cause the temperature increase in the body. When I decided to immigrate to Canada, I was depressed. I knew I would miss my parents and friends as well as the familiar environment. I felt sad. My gingiva swelled. It was on fire. Too much heat in the body. When I had a baby in Canada, I was nervous. No relatives here. My gum swelled again. It was also on fire again. (C) [Translation]_  

_Fire is a concept in Chinese medicine. Fire is not outside the human body. It is inside the body. It is related to one’s mood. This is the main problem linked to fire. If an individual has too many worries or is too busy and is not well-rested or faces too much stress, the fire flares up. The second is related to diet. If an individual eats a lot of food that can cause fire and he or_
she does not drink enough, fire will accumulate in the body. The foods that I refer to are those fried foods or too “hot food”. Those foods can irritate the fire. (G) [Translation]

In order to prevent gingival swelling, participants would thus address local and general etiological factors. On the one hand, they would recommend maintaining good oral hygiene, in particular brushing the teeth and rinsing the mouth with salted water. On the other hand, they would suggest lessening stress, increasing the amount of rest, and improving mood, and diet (avoidance of fried or spicy food, or excessive meat consumption). Some of the participants also believed that drinking traditional herb teas could keep the gum from swelling.

I believe that the main problem is oral hygiene. Brushing your teeth and tooth paste are also important. Tooth brushing should be done from different angles. The individual also needs to pay attention to diet. He or she needs to consider what he should eat and what he should not. Do not eat the foods that can cause the fire. If you eat, drink cold tea. Above all, brushing my teeth, paying attention to diet, and rinsing my mouth are the ways I use to maintain my dental health. Also I find good rest is very important. Do not stay up too late. I hope you do not stay up. Good mood is very important. I try to keep a good mood. Optimism is very important. I try to be optimistic. Try to tolerate everyone. This includes my wife and my children. (G) [Translation]

In order to treat gingival swelling, interviewees refer to both traditional and western medicine. If “internal fire” was regarded as the main causal factor, participants referred to traditional Chinese medication - available in Chinese pharmacies or convenience stores in Montreal - in order to reduce the “fire” and resolve the gingival problem. According to them, not only was there no harm in self-treatment and the use of traditional herbs such as Xiguashuang, Chinese medications also had fewer side effects than western medications. If local factors were regarded as the main cause of gingival swelling, some participants suggested self-treatment with antibiotics and consulting a dentist should the antibiotics fail.

I took antibiotics. I also took some medicines for treatment of the toothache. I brought this medicine from China. They are medicines that are commonly used in China for the treatment
of toothache. For example, tooth pain killer. I forget the name. It is commonly used in China for toothache. I also took some medicines to treat the gum redness and swelling. Sometimes I use toothpaste to treat gum redness and swelling. I put the toothpaste on the gum surface that is red and swelling. The redness and swelling last two or three days. (J) [Translation]

It is on fire. The gum swelled. It is gum swelling. I used the Xiguashuang (Chinese medicine). The swelling disappeared. If the toothache is caused by the dental caries, the pain cannot be eased by the Xiguashuang. I once went to see a Canadian dentist because of toothache. He told me I had no dental caries. I realized that I had too much fire. If I tell westerners about the fire, they do not understand what I mean. I used Xiguashuang that I bought by myself. I used it twice a day. The toothache disappeared. I use Xiguashuang to ease the toothache. It is Chinese medicine. It does not cause bleeding. It reduces the fire. It contains mint to ease the pain. It works well. It is not harmful. (G) [Translation]

**Gum Bleeding**

The majority of participants believed that gingival bleeding (traditionally named "gum bed bleeding") - blood in saliva when brushing teeth or eating - was not a real oral disease. Rather, it was perceived as a common and almost normal phenomenon as it is reversible and might even stop by itself.

*I have gingival bleeding when I brush my teeth vigorously. If I brush my teeth gently, I have no gingival bleeding. I am not sure whether gum bleeding is a dental disease or not. I just think it is very common. It may not be a dental disease. I did not see a dentist because of gingival bleeding.* (E) [Translation]

Lack of Vitamin C was identified as the main etiological factor of gum bleeding by most participants. They thought that a deficiency of Vitamin C was due to diet, in particular a lack of fresh fruit and vegetables.

*It is related to lack of Vitamin C. Not eating enough fresh vegetables and fruits can cause this. I do not know whether it is true or not.* (J) [Translation]
As a consequence, participants would suggest increasing the intake of Vitamin C in order to prevent or treat gingival bleeding, even though they did not perceive it as an important problem. Fresh fruits and vegetables were considered effective and affordable sources of Vitamin C, but participants also mentioned self-treatment with Vitamin C tablets. According to them, the amount of Vitamin C taken should be adapted to the severity of the bleeding.

_Eating a lot of vegetables. Eating as much Vitamin C as possible. I do my best to eat a lot of vegetables with a lot of Vitamin C. I will buy a lot of fresh vegetables and fruits._ (J) [Translation]

_If I find gum bleeding without swelling, I think it is caused by a lack of Vitamin C. I will increase the intake of Vitamin C._ (A) [Translation]

**Bad Breath**

Bad breath, also named halitosis by the participants, was regarded as one of the major oral problems affecting the Chinese population because of its impact on their social life. Indeed, bad breath could be noticed by friends or relatives.

_Another problem is bad breath. This is very common among Chinese immigrants. When you talk with someone who has bad breath, you find a strong foul smell. It is not pleasant._ (A) [Translation]

According to the participants, bad breath is a reversible problem that could be caused by local and/or general factors. Local factors, perceived as the main etiological factors, included poor oral hygiene, and in particular impacted food and its consequences. They also referred to tooth problems such as cavities that could trap food debris in the mouth. General factors included lack of sleep, consuming foods with a strong smell, such as garlic and alcohol, and bad eating habits. For instance, the interviewees believed that eating too much meat could lead to poor digestion and, ultimately, bad breath.

_Usually bad breath is caused by tooth problems. According to Chinese medicine, it can also be caused by stomach heat, too much heat in the stomach. What I mean is, if a person has bad breath, he or she should first check whether he or she has a tooth problem._ Good dietary
habits are also important. If you eat too much meat at dinner or drink a lot of wine at night, you will have bad breath the following day. Insufficient sleep can also cause bad breath. (A) [Translation]

Bad breath is usually from dental or oral diseases. It may be related to other diseases. However, the main problem is dental or oral diseases. It reflects the problems of oral health. (E) [Translation]

Recently, I have found I have bad breath. It is also called halitosis. I am not sure whether it is related to the bridge. I believe my oral hygiene has not been good since I got the bridge. If the dental problems are solved, the bad breath will disappear. (H) [Translation]

Participants believed that prevention and treatment of bad breath were very important and involved good oral hygiene, in particular brushing and flossing of teeth. They also recommended getting enough sleep and maintaining good eating habits, in particular avoiding excessive meat consumption and foods with strong smells.

In order to prevent bad breath, people should avoid the factors I mentioned before. If you take care of yourself, you can hear or find the signs that remind you that there is something wrong. You need to pay attention to certain things. Many people do not know this. They do not pay attention to the signs their body is giving them. If a person develops bad breath and decides to see a doctor, sometimes it is too late. (A) [Translation]

Discussion

To the best of our knowledge, this study is the first to provide a detailed oral and dental nosological framework among Chinese immigrants. It reflects the views and perceptions of our participants in Montreal and we need to be careful when interpreting and generalizing our results. The first point that needs to be addressed is the sample size. We obtained saturation after the 10th interview, which means that no new relevant information was added during the last two interviews; we therefore considered that our data was credible and that additional interviews would not be useful. The second point is that our sample consists of relatively recent Chinese economic immigrants who live in Montreal (they immigrated 12 years ago or later). They have
a high level of education, are involved in the city's Chinese community, and their entourage is mostly constituted of people from a Chinese background. Thus, our results may not apply to other types of Chinese immigrants - those who live in different geographical areas for instance. As well, they might not apply to those from a lower educational level, among whom traditional values and beliefs might remain stronger. Conversely, they might not apply to those who are more integrated in the Canadian society, among whom the process of acculturation may have led to the loss of traditional values and beliefs.

This study reveals two major points. The first one is that Chinese economic immigrants in Montreal have a fairly good understanding of dental caries in terms of etiology, process, and prevention and treatment. It thus seems that there is no major cultural barrier between this type of immigrant and oral health care professionals in regard to dental caries. This can be explained by the fact that our participants had a high level of education and were open to western culture; thus they may have had access to scientific knowledge before and after immigrating. Our results differ somewhat from those reported by Kwan\textsuperscript{6,10}, which showed that Chinese immigrants in England lacked faith in dentists and believed that preventive oral health measures were ineffective.

The second main point is that traditional beliefs and medications coexist with scientific dental knowledge and professional treatments concerning problems other than dental caries such as gingival swelling, gingival bleeding, and bad breath. In the case of gingival swelling, for instance, participants identified etiological factors that referred to both cultures: local factors referred to oral hygiene and were related to scientific culture, whereas general factors referred to traditional knowledge ("internal fire"). The methods for preventing and treating gingival swelling showed the same dichotomy: on the one hand, participants suggested improving oral hygiene, using antibiotics and eventually consulting a dentist; on the other hand, they recommended rest, avoiding stress, limiting the intake of hot food and taking traditional herbal remedies. In the case of gingival bleeding, participants identified vitamin C as the main cause, which could also be considered a general etiological factor. However, Chinese traditional medicine
does not acknowledge the role of vitamins. The link that our participants draw between vitamin C and gingival bleeding could instead be explained by their knowledge of the fact that gingival bleeding is one the symptoms of severe Vitamin C deficiency.

The focus on general etiological factors ("internal fire") is common in Chinese traditional medicine, as health and illness are seen as related to a balance of body humours. Internal fire is a form of imbalance that is linked to environmental factors, such as stress and an excess of hot food, and can be resolved by a better lifestyle and the intake of traditional herbs. These traditional health beliefs have been shown to remain strong among people in Hong Kong and even among immigrants in Western countries in regard to general and oral health. After a period of 12 years or less in Canada, the Chinese immigrants in our sample have preserved a strong body of traditional knowledge related to gingival problems, but seem to have adopted scientific knowledge in regard to dental caries.

Our study is important because it raises issues related to dental public health and clinical practice. In terms of clinical practice, our results suggest that, in Canada and in western countries with a high immigration rate from China, oral health care professionals should have a basic understanding of the beliefs of Chinese people. Note that this is already the case in China, where dental students receive training in traditional medicine as well. We thus recommend that lectures on traditional medicine and immigrants' beliefs be provided to dentists through continuing education programs, and to undergraduate dental students in Canada. We think that this would help clinicians to communicate better with their Chinese patients, and would improve upon different steps of the patient-centred approach, including (a) exploring both the disease and the illness experience, (b) understanding the whole person, and (c) finding common ground.

Our study also raises issues in terms of dental public health. As Chinese immigrants are open to scientific culture and seem to take advantage of both scientific and traditional approaches, it would be useful to provide them with basic scientific information when they arrive in their new country. Through information sessions provided by oral health care professionals in Chinese community centres, for instance, or through pamphlets that could be made available...
to them, new immigrants could learn to improve their management of dental health and illness, and facilitate their communication with dentists as well as their adaptation to the culture of their new country.

In conclusion, this study shows that a culture of traditional medicine remains strong among Chinese immigrants in Montreal, even though they are open to scientific and professional dental knowledge. It thus suggests that, in order to facilitate dentist-patient communication, (a) oral health professionals should be informed of the representation of oral health and illness among immigrants, and (b) Chinese immigrants should be provided with basic scientific information. Further studies should be conducted among Chinese immigrants with a lower level of education, since their knowledge of, and openness toward, western medicine might differ from that of immigrants with higher levels of education. In addition, research conducted within a life-course perspective could enable us to understand the Chinese immigrant experience in context and over time.

Contributors

M. Dong and C. Bedos originated the study, directed all aspects of its implementation, and led the writing of this article. They were assisted by C. Loignon and A. Levine conducted the analysis. All authors interpreted findings and reviewed drafts of the article.

Acknowledgements

The authors are very grateful to the participants for their contribution, as well as to the Montreal Chinese Community Centre. They would also like to thank the McGill Faculty of Dentistry, the Canadian Institutes of Health Research (CIHR), and the Fonds de la Recherche en Santé du Québec (FRSQ) for their financial support.

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5.2 Chinese Immigrants' Dental Health Care-seeking Pathways in Montreal, Canada

This article will be submitted to International Dental Journal.

**Chinese Immigrants Dental Health Care-seeking Behaviors in Montreal, Canada**
Abstract: To investigate the oral health care-seeking behaviour patterns of Montreal Chinese immigrants, a qualitative study based on 12 in-depth interviews was conducted among low income Chinese immigrants in Montreal, Canada from January to June, 2005. Themes regarding dental health care seeking pathways, barriers to the use of professional dental health care services, and attitudes to dental health care were coded and analyzed. The results indicated that the dental health seeking pathways include self-treatment, consulting a dentist in Canada or during a return visit to China, and obtaining Chinese traditional medicine. The dental health seeking pathways varied depending on the circumstances. For dental caries and acute other dental diseases such as toothache, Chinese immigrants prefer to consult a dentist. For chronic diseases, some of them rely on self-treatment or seek an alternative treatment such as traditional Chinese medicine. The language barrier, financial problems and lack of trust are the main factors which affect Chinese immigrants’ access to dental care services in Canada. Former bad medical or dental experience among Chinese immigrants causes a loss of trust in Western medicine and dentistry and influences the decision to seek alternative treatments.

Key words: Health care seeking, dental diseases, immigrants, cultural values

INTRODUCTION

Chinese immigrants constitute the fastest growing ethnic minority in North America. Immigrants from mainland China have become the largest subgroup among immigrants in Canada in the past five years. The city of Montreal, where we conducted our research, has one of the largest Chinese communities in Canada.
Immigrants must adapt to their new country as well as a new culture. The adaptation process follows different steps. Immediate concerns include finding a place to live, registering children (or oneself) for school, and opening a bank account. Next they begin the process of adopting new ideas and adjusting their attitudes and behaviours to integrate into their host society. Integration spans several years.\(^2\)

The adaptation process applies to use of medical and dental services, as immigrants discover a new health care system. Indeed, studies have shown that recent immigrants tend to underutilize medical and dental services compared to long term immigrants and non-immigrants.\(^3,4\) However, we know little about immigrants’ reasons for underutilization of dental care.

The objective of this study is thus to better understand how Chinese immigrants access dental care and to identify the kind of difficulties they might encounter when looking for dental treatment.

**METHODS**

We used qualitative research methods to explore dental health seeking patterns among Chinese immigrants in Montreal. The qualitative approach was chosen because it is a useful method to understand people’s experience, cultural values, beliefs, and perspectives.\(^5\)

Twelve first generation adult Chinese immigrants from mainland China were recruited by snowball sampling to locate information-rich key informants. The principle of saturation was applied to decide the sample size.\(^6\) The principal investigator went to the main Chinese community centre in Montreal’s Chinatown and presented the research objectives to community members and volunteers. Community members helped by introducing the investigator to Chinese immigrants who fulfilled the inclusion criteria. In this study, we recruited people who were (1) born in China; (2) first generation immigrants; (3) residing in Montreal; (4) economic immigrants; and (5) aged 20 and over.

Table 1 shows a summary of demographic characteristics and dental insurance of the participants. All participants had a high level of education as they were economic immigrants.
Despite a high level of education, all of the participants had a low income due to unemployment or short term employment. Most immigrants realized that without Canadian experience and a strong social network, it would be very hard to find a professional job. Ten out of twelve interviewees thus decided to go back to school to upgrade their language and knowledge. More than half of the participants had no insurance that covered dental care in Canada. The dental insurance which some of participants enjoyed came from student dental insurance plans.

In China, before immigration, eleven out of twelve participants enjoyed government insurance which covered 80% of dental services. Only one had no dental insurance.

Table 1. Demographic Characteristics and Dental Insurance of the Participants (N=12)

<table>
<thead>
<tr>
<th>Demographic Characteristics</th>
<th>Number of participants (N)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age (years)</strong></td>
<td></td>
</tr>
<tr>
<td>20-40</td>
<td>6</td>
</tr>
<tr>
<td>41-70</td>
<td>6</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>5</td>
</tr>
<tr>
<td>Female</td>
<td>7</td>
</tr>
<tr>
<td><strong>Years in Canada (years)</strong></td>
<td></td>
</tr>
<tr>
<td>0-3 years</td>
<td>4</td>
</tr>
<tr>
<td>4-8 years</td>
<td>6</td>
</tr>
<tr>
<td>8-12 years</td>
<td>2</td>
</tr>
<tr>
<td><strong>Marital status</strong></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>10</td>
</tr>
<tr>
<td>Single</td>
<td>2</td>
</tr>
<tr>
<td><strong>Education (degree)</strong></td>
<td></td>
</tr>
<tr>
<td>College</td>
<td>1</td>
</tr>
<tr>
<td>University</td>
<td>11</td>
</tr>
<tr>
<td><strong>Occupation</strong></td>
<td></td>
</tr>
<tr>
<td>Unemployed</td>
<td>5</td>
</tr>
<tr>
<td>Employed temporarily part-time</td>
<td>2</td>
</tr>
<tr>
<td>Student</td>
<td>5</td>
</tr>
<tr>
<td><strong>Dental Insurance</strong></td>
<td></td>
</tr>
<tr>
<td>Dental Insured</td>
<td>5</td>
</tr>
<tr>
<td>No dental insured</td>
<td>7</td>
</tr>
</tbody>
</table>
In-depth one-on-one semi-structured interviews were conducted in the participants’ house or in suitable public places if preferred by interviewees. The environment was quiet and the discussions were not interrupted by other people or phone calls. Each interview lasted approximately one and half hours. Interviews were conducted in Chinese and were audio tape recorded with participants’ permission. Indeed, before the interview, all participants signed a consent form approved by the Ethics committee of the Faculty of Medicine, McGill University.

The interviewer used an interview guide that was thematically structured and focused on Chinese immigrants’ experience of dental diseases as well as management of dental diseases. The key themes explored symptoms and diagnosis of oral diseases, decisions surrounding management of oral problems, oral health care seeking pathways, and outcomes of management of oral diseases. For instance, the interviewer asked participants, “What was your last dental problem?” and “What did you do for your last dental problem?”

All discussions were transcribed verbatim immediately after each interview. Then the texts were translated into English and reviewed by another Chinese-English bilingual speaker.

The analysis of discussion included three main steps: filling a contact summary sheet; coding; reducing and interpreting data. The contact summary sheet was completed right after each interview to summarize the discussion, identify main themes and new hypotheses. It also helped us identify methodological problems and prepare the subsequent interviews.

QSR NVivo 2.0 software was used to code the discussion text in its entirety. We developed the codes according to our research themes. Several readings of the data were taken to code the data completely. Then we reviewed codes and eliminated the less useful ones and combined smaller categories into larger ones. If a very large number of texts had been assigned the same code, we subdivided that category into smaller ones.

The discussion texts were summarized and indexed by theme and subtheme. We also organized the data in a figure that presented the participants’ dental health care seeking pathway. As researchers systematically checked and validated the interpretations, the analytic process was recursive and interactive.
RESULTS

Use of Dental Services

Since moving to Canada, none of our participants have consulted a Canadian dentist for a check-up. However, almost all of them (11 out of 12) have consulted a dentist as a consequence of acute problems such as toothache. Their use of dental services in Canada is thus associated with the occurrence of symptoms rather than with preventive care. Only one of our participants did not go to a practitioner even though he experienced symptoms.

All respondents emphasised that the situation was different in China. As all of them had medical and dental insurance and as hospitals arranged regular medical and dental check-ups for government employees, half of them used to consult a dentist every year for a basic check up. The other half consulted a dentist when confronted with oral problems or when they suspected one. In addition, all interviewees consulted a dentist for a check-up right before they immigrated to Canada or upon a return visit to China, after immigrating. They believed the cost of dental services were higher in Canada. In addition, they explained they did not know where to find a dentist with good clinical experience in Canada. They also worried about communication with a dentist who had a different cultural background.

Description of the Oral Health Care Pathway in case of Dental Caries

The most common disease that our participants experienced was dental caries. Therefore, we only reported oral health care pathway in case of dental caries in this article. Further study need be taken on to analyze oral health care pathway regarding gum and other periodontal problems. In Figure 1 we summarized the dental care pathways of the participants for the most common oral disease: dental caries.

Dental Caries Symptoms and Diagnosis

Nine out of twelve respondents mentioned that they have experienced symptoms of dental caries since they have moved to Canada. They identified two types of symptoms: pain and visual symptoms (cavity or black spot). Participants classified dental caries as light or severe according
to the intensity of the symptoms. Black spots or small cavities without pain were grouped into light dental caries whereas severe caries included big cavities and cavities with toothache.

*I found I had dental caries. I could see a cavity. Sometimes when I brushed my teeth, it felt sensitive.* (1) [Translation]

Decision to Manage Dental Caries

When confronted with the symptoms described above, they first performed a self examination using a mirror, or asked friends or relatives to check their teeth, looking for outward symptoms, such as a black spot. Some of our participants applied cold or hot water to confirm dental caries. These visual and sensory cues informed their self diagnosis. Self diagnosis was based on former experience or friends’ and relatives’ experience.

Four of our six participants who suffered light dental caries decided to consult a dentist immediately whereas the other two decided to wait and adapt to symptoms because of financial difficulties. As the latter two experienced no pain, it was not hard for them to adapt to symptoms:
they properly cleaned the area surrounding the tooth and brushed the black spots after eating. As well, they tried to eat soft foods and to avoid hot or cold foods.

I felt well. But I knew I had a cavity. One part of the tooth broke. I did not want to do anything for that tooth. Seeing a dentist was very expensive. I just let it go naturally. (D) [Translation]

After eating, I usually brush my teeth and rinse my mouth to clean the teeth and remove the impacted foods. (E) [Translation]

The participants who were confronted with severe dental caries explained that the pain convinced them to consult a dentist.

When I had toothache, I went to see a dentist no matter how much I needed to pay for the services. (B) [Translation]

The Search for a Dentist
As none of our participants had a family dentist, they searched for a dentist based on three major needs: obtaining emergency services, meeting an experienced dentist and receiving treatment at a reasonable cost. Even though ability to speak Chinese was not their main criteria of selection, it was still believed to be important. Indeed, most participants worried about misunderstanding medical and dental terms in English or French. Therefore, they preferred a Chinese-speaking dentist.

I hope to see a Chinese dentist because it is easy to communicate with the dentist. There is no language barrier. (A) [Translation]

In order to find a professional that responded to these criteria, participants turned to friends or relatives for references. Some participants also consulted Chinese newspapers in Montreal in order to get information on dentists.

I just know McGill University dental students can give treatment which may be free or at low cost. I believe a student can not give a good treatment. I do not want to see a dental student. (E) [Translation]
I knew that dentist through the Chinese newspaper. Another reason is that my friend told me that dentist was good. That is why I chose that Chinese dentist. In China, my friends usually told me which dentist was good. (A) [Translation]

Meeting with a Dentist

Three participants happened to go back to China to visit relatives and took advantage of their trip to consult a dentist in China. One of them had first consulted a Canadian dentist before visiting a dentist in China. They went to the dental clinic in a hospital without an appointment. These participants saw a dentist in China for the following reasons: 1) They could easily find a dentist whom they knew to be competent; 2) They trust Chinese dentist’ skills; they believed dentists in China were highly experienced due to a large patient pool; 3) The cost of seeing a dentist in China was cheaper than in Canada.

I believe doctors [including dentists] in China have more clinical experience than the doctors and dentists in Canada. Also I believe doctors and dentists in China work harder than Canadian doctors and dentists. Doctors and dentists in China see many patients everyday. They meet a lot of different cases in their daily work. I had a tooth which needed a root canal treatment. The dentist in Canada took an x-ray for me. He told me the tooth had four roots. It would cost 1600 dollars for the root canal treatment. My dental insurance only covers some parts of dental services. Therefore, I went back to China to see a dentist for the root canal treatment on that tooth. The dentist also did a bridge for me. It was cheaper in China. I also visited my friends. When I need a denture or a complex treatment, I prefer to go back to China to see a dentist. (H) [Translation]

The respondents who had not had a chance to return to China for a visit decided to consult a dentist in Canada and often went to the clinic without an appointment. Some of them, however, preferred to consult a dentist with a Chinese background in Montreal’s Chinatown because they thought it would be easier to communicate.

Treatment Decisions
All of our participants preferred to keep their own teeth. Therefore, they respected their dentists' suggestions to place dental fillings in the case of light dental caries, and perform endodontic treatment in case of severe caries. However, they chose low cost filling materials such as dental amalgam for back teeth. For severe dental caries, all of them received root canal treatment. After root canal treatment, two of them got a crown for the damaged tooth so as to prevent tooth fracture.

_The dentist took an x-ray film for me and told me the tooth nerve should be pulled out. The nerve got infected. It cost me several hundred dollars. I had no choice. A toothache is very painful. I know dental health is very important._ (B) [Translation]

**Relationship with the Dentist**

Most interviewees were satisfied with the dental services in Canada as the treatments were done without pain and other discomfort.

_In Canada when the dentist treated me, I did not feel pain. He gave me an anesthetic and asked me whether I had pain. In China I was afraid of pain. I believe if I have a toothache in Canada, I will see a dentist here._ (C) [Translation]

One participant was frustrated, however, because of having to keep her mouth open for a long time during treatment and feeling unwell after the treatment. All participants complained about the high cost of dental services, short opening hours and the long waiting time at the dental office.

_I know that dental health is very important. But I can not afford the service fee. It is too expensive for me. I also find that the dental chair and other dental instruments are not as good as those in China. The dental chair and instruments are very old._ (B) [Translation]

_I also heard that the McGill student dental clinic costs less. I went there several times. I find the hours of service in the student dental clinic are not good. The office only opens in the day time. I had a job at that time. I had to ask for leave._ (L) [Translation]

The participants of those who consulted dentists in China were satisfied with their services as the waiting time was short and the treatments were done without pain and other discomfort.
DISCUSSION

The results from this study show that there was a strong gap between Chinese immigrants in Montreal and dental health services in Canada as some persons prefer to consult a dentist in China when they have the opportunity to visit their family members rather than consulting in Montreal.

However, we need to be careful interpreting our results, since our study presents several limitations: 1) our sample size was small, which is common in qualitative research⁶. For instance, Marziali conducted a study with a sample of 9 family members in order to examine persistent family concerns in long-term care settings⁸. 2) Our sample was a specific sample. It was constituted of Chinese immigrants who lived in Montreal and had a high level of education but low income. Therefore, our results may not apply to other kinds of Chinese immigrants, for instance those with high income and better access to dental services. It might not apply to second or third generation immigrants, either. Indeed, the children and grandchildren of immigrants are exposed to western culture and thus differ from our participants, who once lived in China where traditional medicine and modern medicine are given equal respect and place in the health care system⁹.

In a previous article¹⁰, we showed that Chinese immigrants believed they should consult a dentist when affected by dental caries. Here we demonstrate that they encounter barriers in regard of access to dental services. For instance, some of them tend to wait if the symptoms are not severe. Others avoid consulting a dentist in Montreal and take advantage of a trip to China to visit a dentist and have their teeth treated at a reasonable cost. The barriers that Chinese immigrants face are twofold: financial barriers result from unemployment or underemployment and lack of dental insurance, while cultural barriers result from language problems, differing cultural beliefs and use of alternative forms of treatment.

Even though Lukes also reported the importance of the financial barrier among immigrants to the United States¹¹, this explanation requires further qualification in the Canadian context. In our study, the majority of participants were eligible for the government welfare program
which provides public dental insurance for basic dental treatment. However, they did not apply for welfare and thus did not take advantage of the dental insurance because of a reluctance to be seen or treated differently. Lack of recourse to government support is due to the fact that our participants are economic immigrants who once had good jobs and were well-respected in China. Therefore, they do not want to be labelled as economically disadvantaged. They prefer instead to manage the financial burden by themselves. This finding is different from Birrell’s report, which shows that Special Benefits in Australia mostly went to elderly Vietnamese and Chinese migrants. They do not face the same stigma concerning with general medical care as there is universal medical insurance in Canada. They thus consult a physician without feeling marginalized or being perceived as an immigrant taking advantage of the system. As a consequence, they are comfortable getting general health benefits—but not dental benefits.

In the case of information about dental care services, our participants mainly depended on close family members and relatives as well as the local Chinese community. As Choldin pointed out, reliance upon a close kin network may limit recent immigrants to their ethnic culture. To a certain extent, this may hinder the process of Chinese immigrants’ dental adaptation.

Our research is important as it not only reveals Chinese immigrants’ willingness and ability to take care of their dental health, but also the difficulties they encounter in access to dental services. We thus believe that Chinese immigrants’ access to dental services could be improved in various ways. Notably, the government could improve dental coverage for low income populations by providing universal dental insurance. Information about dental health care services should be made available in Chinese languages, in order to help immigrants make better use of them.

For their part, dentists should be made aware of their patients’ culture as this could contribute to changing the behaviors and improving the dental health practices of their patients. Respecting Chinese traditional medicine and its lay use would help to foster trust and understanding. For instance, recruiting Chinese dental health providers may improve communication between dentists and Chinese patients and create a more welcoming environment. Lectures in
dental faculties about Chinese culture, traditional medicine and dentistry may help dental health care providers increase cultural awareness, knowledge and management of Chinese dental patients. Greater knowledge and awareness might also contribute to the development of culturally appropriate oral health education materials.

Contributors

M. Dong and C. Bedos originated the study, directed all aspects of its implementation, and led the writing of this article. They were assisted by C. Loignon and A. Levine conducted the analysis. All authors interpreted findings and reviewed drafts of the article.

Acknowledgements

The authors are very grateful to the participants for their contribution, as well as to the Montreal Chinese Community Centre. They would also like to thank the McGill Faculty of Dentistry, the Canadian Institutes of Health Research (CIHR), and the Fonds de la Recherche en Sant du Quebec (FRSQ) for their financial support.

References


CHAPTER 6
Discussion

The objectives of this study were to understand Chinese immigrants’ oral and dental beliefs; to identify oral and dental health care-seeking pathways among Chinese immigrants in Montreal. To the best of our knowledge, this study is the first to provide a detailed framework of oral and dental nosology among Chinese immigrants.

6.1 Limitations of This Study

The first point that needs to be addressed is the sample size. In this study, we recruited 12 participants, which could be considered as a small sample size. However, we obtained saturation [94] after the 10th interview, which means that no new relevant information was added during the last two interviews; we then considered that our data was credible and that additional interviews would not be useful. Saturation is the moment when the last interviews brought little original information and that no new insights were likely to be obtained in conducting additional ones [94]. In addition, qualitative research puts the emphasis on people’s “lived experience”. Patton pointed out that in-depth information from a small number of people can be very valuable, especially if the cases are information rich [94]. Small sample size with rich information is also one of the strengths of qualitative data. For instance, Marziali conducted a study with a sample of 9 family members in order to study persistent family concerns in long-term care settings [81].

Secondly, our sample is comprised of recent (12 years or less) Chinese economic immigrants who live in Montreal (the second largest city in Canada), have a high level of education (at least completed university studies), live in low-income families, and are involved in social activities through the Chinese community centre. Therefore, they have a wide social network in Montreal’s Chinese society. Thus, our results may not apply to those Chinese immigrants who live in different geographical areas or have a narrow social network. For instance, Chinese
immigrants in Winnipeg, where the Chinese community is not as developed as in Montreal [30], may have more contact with people from a non-Chinese background. As a consequence, they may give up more of their Chinese culture and adopt other cultures to a greater extent. In addition, our participants are educated people, and are open to the new knowledge. Hence, our results may not fit those who have a lower social class background, in which traditional values and beliefs may be stronger [71]. People with a low level of education usually obtain knowledge directly from parents and other family members, from friends or from their experiences [89]. Therefore, they may be less in contact with modern scientific knowledge, and may absorb more traditional beliefs. Our results may not apply to other generations of Chinese immigrants, such as the second or third generation immigrants who grew up in Western countries. Second and third generation immigrants are mainly exposed to Western culture. They are not the same as our participants who once lived in China, where traditional medicine and modern medicine are given equal respect and place in the health care system [47]. We thus need to be careful when interpreting and generalizing our data. In qualitative research, we are concerned about data transferability. We generally assume it is up to reader to determine whether the research results can be applied to his or her context. Readers note the specificity of the research situation and compare it to the specificity of an environment or situation with which they are familiar. If there are enough similarities between the two situations, readers may be able to infer that the results of the research would be the same or similar in their own situation. In other words, they “transfer” the results of a study to another context [94].

6.2 Strengths of This Study

This study meets the credibility criteria for qualitative research. Credibility, in contrast to quantitative research internal validity, is a concept used to evaluate rigor in qualitative research [94]. The credibility of our research is based on a series of factors: First, our researchers, as research instruments, are trained researchers with experience in conducting qualitative research. Our research team is an active team consisting of two researchers with a dentistry
background and two researchers with a social science background. As the researcher who conducted the interviews is a Chinese immigrant from China, she understands the language and the culture of the participants. In addition, the participants wanted to talk with the researcher as they thought the researcher had had the same experience as them. They perceived the researcher as one of their own, who could understand and share their stories. They also regarded the researcher as a friend who needed their help, rather than as a stranger who just wanted to take something from them. On the other hand, there were some inconveniences. For instance, participants, especially the elderly, sometimes talked beyond the topic on which our research was focused. In this case, the researcher usually tried to probe the context. In accordance with Patton's suggestion [94], the researcher restated the original subject under discussion or asked for more detailed information about it. Thus the interviews were purpose-based and allowed us to collect in-depth data. Second, our study design and data collection were rigorous. Data collection was conducted after six pilot interviews and after the interviewer enrolled in activities conducted by the Montreal Chinese community. Furthermore, in order to obtain high quality data, our interviewer was involved with the participants. She took part in Chinese community and participants' activities several times to build trust with Montreal Chinese immigrants. Third, our data was systematically analyzed with attention to the issues of credibility, transferability and dependability [94]. In qualitative research, credibility (vs. internal validity), transferability (vs. external validity) and dependability (vs. reliability) are used to measure the quality of research. Credibility means being believable or trustworthy or making sense. Transferability depends on whether a reader considers the results are transferable to his or her own research. Dependability is to evaluate whether the process of the study is consistent [88]. We identified the changes that occurred in the setting and how these changes affected the method of approach for research in the study. We altered the research design, as new findings emerged during data collection. Furthermore, during the interviews, the researcher restated, summarized or paraphrased the information received from the respondents to ensure that what was heard was in
fact correct. We used the triangulation method to confirm our findings, which means that different researchers in our group checked and discussed interview data and interpretations several times. Triangulation is the basic method for confirming findings [88].

6.3 Contributions of This Study

To the best of our knowledge, this study is the first to provide a framework for a detailed oral and dental nosology among Chinese immigrants.

6.3.1 Oral Health Beliefs of Chinese Immigrants

This study reveals that participants in this study have a very good understanding of dental caries in terms of its etiology and process, as well as ways to prevent and treat it. For instance, our participants believe that bad oral hygiene and sugar cause dental caries, professional dental treatment is effective for dental caries, good oral hygiene can prevent dental caries, and regular dental check-ups are necessary. These beliefs are different from traditional Chinese beliefs. Indeed, according to Chinese immigrants, dental disease is a part of life. Dental decay is inheritable and unpreventable [62]. It thus seems that there are no major cultural barriers between this type of immigrant and oral health care professionals in regard to dental caries. This can be explained by the fact that our participants had a high level of education, and were active in the Chinese Community Centre, in addition to being open to Western culture; thus they may have had access to scientific knowledge before and after immigrating. This lack of barriers between this type of immigrant and oral health care professionals may also be related to the development of oral health education in China [72]. Nowadays, there are at least 27 universities that provide training programs for stomatologists, and more than 30 training schools for health care workers for training middle-level dentists in various provinces in China. Additionally, there are many public oral health care promotion programs in different areas in China each year [72]. Our results differ somewhat from those reported by Kwan [62], which showed that Chinese immigrants in England lacked faith in dentists and believed that preventive oral health measures were ineffective. A possible reason is that Kwan's study focused on elderly Chinese immigrants with
low levels of education, who might be more strongly influenced by traditional cultural values and beliefs [71].

We also found that traditional beliefs and medications coexist with scientific dental knowledge and professional treatments in regard to problems other than dental caries, such as gingival swelling, gingival bleeding and bad breath. For instance, they believe that gingival swelling is caused by local factors (poor oral hygiene) and general factors ("internal fire"). As modern dentistry believes there is a relationship between oral hygiene and periodontal diseases [5], the concepts of bad oral hygiene and gingival swelling come from scientific dental knowledge, while "internal fire" is related to traditional Chinese cultural beliefs. Traditional Chinese medicine believes that health is a dynamic equilibrium between yin and yang [40]. A loss of balance in yin-yang increases "hot air", which causes gum diseases [71].

Former studies about Chinese people's beliefs (in the UK and in Hong Kong) regarding gum diseases reveal that the majority of adult Chinese maintained traditional beliefs about gum diseases [62, 95]; these beliefs refer to the etiology of gum diseases as "internal fire". A small proportion of Chinese rejected traditional beliefs and accepted scientific dental knowledge, in particular the fact gum disease comes from bad oral hygiene [95]. As far as we know, our study is the first to report on the mixed dental health beliefs among Chinese immigrants regarding gingival swelling.

It is not difficult to explain these coexisting concepts, because in China, stomatology is a blend of traditional Chinese medicine and Western-style dentistry [82]. Oral health providers in China apply knowledge and skills related to both dentistry and traditional medicine to treat patients. Thus patients are in contact with both traditional beliefs and scientific dental knowledge. Another possible reason is that our participants are recent immigrants who may be in a stage of integration, which means they gain knowledge of the new culture without giving up their old identities [42]. Because of their high education level, they may be open to scientific knowledge. In the mean time, their social networks are within the Chinese society itself, which means the
participants are able to maintain their cultural values and beliefs. Hence, our results are different from data about oral health beliefs among Chinese immigrants who maintain only their own cultural beliefs, and reject the new culture. For example, elderly Chinese immigrants with low levels of education were reported as holding traditional concepts, in particular “internal fire” as a causal factor of gum diseases [62]. As Hrboticky reported that the second generation of Chinese immigrants tended to give up cultural health values [51], our results may not apply to the second generation of immigrants. Further studies need to be conducted to confirm this.

As Chinese culture is unique and holds some values and beliefs that contrast with the Western style of dentistry, it is important to raise concerns about cultural issues, such as understanding and respecting culture beliefs. This may facilitate dentist-patient communication, and develop culturally relevant oral health promotion programs [79].

Furthermore, we find that Chinese immigrants believe that gum bleeding is caused by a lack of Vitamin C. They may only consider general etiologic factors, because one symptom of lack of Vitamin C is gum bleeding [80]. However, they ignore the important local factor (dental plaque) [36]. Therefore, we suggest improving Chinese immigrants’ dental knowledge of gingival infection.

6.3.2 Chinese Immigrants’ Dental Health Care-seeking Pathways

Our research is important as it not only reveals the richness of Chinese immigrants’ traditions, and their willingness and ability to take care of their dental health, but also the difficulties they encounter in access to dental services. The barriers that Chinese immigrants meet are two-fold: financial and cultural (language barrier, cultural beliefs and so on). Even though Lukes also reported the importance of the financial barrier [77], we find that we cannot simply explain and link it to the use of dental services by immigrants. In our study, the majority of them are eligible for public dental insurance, which covers basic dental treatments. However, they did not apply for public dental insurance, nor did they take advantage of government programs. Indeed, they did not want to be treated as different people, and they tried to manage the financial barrier by themselves. This is different from Birrell’s report, which shows that Special Benefits from
the Australian government went mostly to elderly Vietnamese and Chinese immigrants [13]. The possible reason may be because our participants are economic immigrants who once had good jobs and were respected by others in China. Therefore, they did not want to be recognized as socio-economically disadvantaged. For instance, some of them went back to China to see a dentist who offered fees that were acceptable to them. In the case of medical problems, however, they consulted a physician in Montreal. They explained that Canadian medical health care is not for profit, and that all Canadian immigrants and citizens enjoy free or very low cost medical services [65]. As a consequence, they are comfortable in benefiting from a government program. We do not find similar reports from other researchers.

We also observed that Chinese immigrants have recourse to both traditional and Western medicine. We can explain this as follows: 1). As our participants hold oral health beliefs that mix traditional beliefs and medications with scientific dental knowledge and professional treatments in regard to gum swelling, we are not surprised that our participants resort to both traditional and Western medicine. 2). Our participants stated that Chinese herbs were easy to get, worked well and had fewer side effects. As our participants were low-income individuals, it was reasonable for them to seek Chinese herbs. For instance, they stated that “cold teas”, which they use to treat gum swelling, cost them less than 2 Canadian dollars. Therefore, our results may not fit Chinese immigrants with high incomes. High-income Chinese immigrants may consult a dentist to manage dental problems and may have regular dental check-ups to maintain their dental health. 3). A blend of traditional Chinese medicine and Western-style dentistry is common in China [82] and traditional medicine and modern medicine are given equal respect and place in China [47]. Therefore, traditional medicine does not exclude Western medicine. They coexist and seem compatible.

We noticed that Chinese herbs (cold teas) were common herbs used to treat gum swelling. The possible explanation is that traditional medicine believes that gum diseases are related to “hot” and loss of yin-yang balance, and cold teas can counterbalance “hot” and re-establish the balance [40].
In addition, we found that Chinese immigrants use Vitamin C to treat gum bleeding. They stated that Vitamin C works well for gum bleeding. As they believed that gum bleeding stems from a lack of Vitamin C, it is reasonable that they took Vitamin C to treat gum bleeding. However, self-treatment for gum bleeding with Vitamin C may allow them to postpone proper dental treatments. Unless dental plaque is removed, periodontal tissue will be damaged continuously and inconspicuously [56].

Finally, we should address the fact that our participants took Chinese herbs and Vitamin C based on their former experiences or suggestions from their friends or relatives. They did not have medical training. Self-treatment with Chinese herbs may be harmful to patients’ oral health. Therefore, we suggest dentists pay attention to patients’ medical histories, including the use of herbal agents, as Ciancio pointed out that medication is a risk factor for periodontal therapy [26].

6.4 Recommendations

In terms of clinical practice, our results suggest that, in Canada and Western countries with a high immigration rate from China, oral health care professionals should have basic knowledge of the beliefs of Chinese people. We thus recommend that lectures on traditional medicine and immigrants’ beliefs be provided to dentists. The lectures should include the following: 1). Basic concepts of traditional Chinese medicine such as yin-yang, hot-cold, balance. 2). How traditional Chinese medicine explains some common dental diseases such as gum diseases. 3). How traditional Chinese medicine manages dental diseases. 4). What is the immigration adaptation process and what are the factors of influence.

We think that this would help clinicians to communicate better with their Chinese patients, and enhance the following steps in the patient-centred approach: a) Exploring both the disease and the illness experience; b) Understanding the whole person; c) Finding common ground. Through these, dentists may understand what Chinese patients mean about “internal fire” and “cold tea”, and may not be surprised at some of the oral health behaviours among Chinese immigrants. When dentists talk with Chinese patients, they may be able to use some of the
traditional Chinese terms that Chinese patients find easy to understand. This may also help to close the gulf between dentists and Chinese dental patients.

As Chinese immigrants are open to scientific culture and seem to take advantage of both scientific and traditional approaches, it would be useful to provide them with basic scientific knowledge. This could be done through information sessions provided by oral health care professionals in Chinese community centres, or through pamphlets that could be made available to them. Pamphlets should be written in Chinese so that Chinese immigrants can understand them easily. They should introduce these concepts: 1). Importance of regular dental check-ups; 2). How to maintain gum health in a scientific way; 3). How to see a dentist in Canada, 4). Risks associated with self-diagnosis and treatment of dental diseases.

We believe that because Chinese immigrants pay attention to their oral health and do not often use dental services, emphasis on regular check-ups may improve Chinese immigrants’ access to dental care. Since the dental health system in Canada is different from that in China, we also believe that information about how to see a dentist in Canada would improve Chinese immigrants’ management of dental health and illness, make their communication with dentists easier, and facilitate their adaptation to the culture of their new country. In addition, as our results show that self-diagnosis and treatment of dental diseases are common among Chinese immigrants, we believe that talking about risks associated with self-diagnosis and treatment of dental diseases is necessary.

We found that difficulties in Chinese immigrants’ access to dental care include financial and cultural barriers, and that Chinese people did not want to depend on welfare. Thus we believe that Chinese immigrants’ access to dental services could be improved in various ways: 1). Improving public dental coverage for the whole population. Patients may be comfortable using government support without feeling different. 2). Recruiting Chinese dental health providers may improve communication between dentists and Chinese patients, and create a more welcoming environment because of their shared cultural beliefs and common language. A possible
way is to recruit immigrant Chinese who were formerly dental health care providers in China or other countries, so that they are able to practice in Canada.

As Chinese immigrants are heterogeneous with respect to length of stay, category of migration and socioeconomic status, we suggest further studies should be conducted in the following areas: 1). Different generations of Chinese immigrants. 2). Chinese immigrants with different levels of education. 3). Refugees. 4). Chinese immigrants at different stages of adaptation, or a follow-up study to observe adaptation and dental health beliefs and behaviours.
CHAPTER 7
Conclusion

This study describes oral health beliefs and behaviours among Chinese immigrants in Montreal, Canada. The findings of this study suggest that:

1. Traditional medical culture remains strong among Chinese immigrants in Montreal, even though they are open to dental scientific and professional knowledge.

2. The language barrier, financial problems and lack of trust are the main factors that affect Chinese immigrants’ access to dental care services in Canada. Previous bad medical or dental experiences among Chinese immigrants cause a loss of trust in Western medicine and dentistry, and influence the decision to seek alternative treatments.

3. In order to facilitate dentist-patient communication, (a) oral health professionals should be informed of how immigrants view oral health and illness, and (b) Chinese immigrants should be provided with basic scientific knowledge.

4. To increase Chinese immigrants’ access to dental care, governments should improve dental coverage for the population as a whole. Dentists should increase their awareness of their patients’ culture.
Appendix A

Interview Guide

The figure below shows the interview guide:
Appendix B

Consent Form

Title of the study: The use of dental services by Montreal adults living below the low-income line.

Principal Investigator: Dr. Christophe Bedos - Faculty of Dentistry, McGill University (Montreal, Quebec).

Sources of financing: FRSQ (Fonds de Recherche en Sant du Quebec) [Quebec health research fund] and GREAS1 (Groupe de Recherche sur l’quit d’Accs aux soins de 1re ligne) [research group on equal access to primary care].

Purpose of this study

The purpose of this study is to gain a better understanding of your experiences and views with regard to dental health and using the services of a dentist: Under what circumstances do you visit the dentist? Have you found it difficult to get an appointment? Are you satisfied with the oral health care you receive? Your responses to questions of this kind will help us to better understand the dental health needs of people in Quebec.

Nature of your participation

We invite you to participate in a personal interview with one of our researchers. It will take the form of a discussion, and will last for between 1 and 2 hours. Should you find that this is too long, we will suggest shortening the interview and continuing the discussion another day, at your convenience. The discussion will be recorded with a tape recorder, as it is impossible for the researcher to write down everything during the interview. The discussion on the audiotape cassette will then be typed up, and the cassette will be destroyed. At the end of the interview, you will be reimbursed $25.
Research ethics
You will have the right, at any time, to withdraw from the study. You may also refrain from answering any questions that make you feel uncomfortable. In all cases, there will be no negative consequences should you decide to withdraw or not answer.

Confidentiality
Your identity will remain completely confidential: the sheets containing your name and telephone number(s) will be destroyed after the interviews; the audiotape cassettes and the questionnaires will also be destroyed once their contents have been typed up. The transcriptions of the interviews will not contain any names, neither yours nor anyone you mention during the discussion. Thus, it will be impossible to identify you from the documents that will be made public.

Risks and benefits
Participating in this interview does not involve any particular risk, as it is simply a discussion with a researcher; furthermore, we guarantee the strictest confidentiality. On the other hand, your participation could have positive repercussions and could contribute to a better understanding of the dental health needs of people in Quebec.

I, the undersigned ____________, agree to participate in the study under the conditions described above. I am aware that my participation in this project is entirely voluntary and that I am free to participate in it. I understand the information in this form, and I certify that all my questions have been answered and that I have been given sufficient time to make a decision. I understand that I may withdraw my participation at any time without damaging the relationship with the researchers and without prejudice of any kind. Finally, I have been told that my name will not appear on any document made public.
Date: ________________________________  Signature of the participant:


Signature of the researcher:

**Contact details of the Research Team**

Should you require any further information about this study or should you wish to know the results of the research, please contact one of the following researchers:

<table>
<thead>
<tr>
<th>Name of researcher</th>
<th>Institution and address</th>
<th>Contact details</th>
</tr>
</thead>
</table>
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## Appendix C

### A Final List of Codes

<table>
<thead>
<tr>
<th>Category</th>
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<tbody>
<tr>
<td><strong>Social Demographic</strong></td>
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</tr>
<tr>
<td>SD: Current living area</td>
<td>1.2</td>
</tr>
<tr>
<td>SD: Education, Job, Income</td>
<td>1.3</td>
</tr>
<tr>
<td>SD: Former career, geographic location</td>
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</tr>
<tr>
<td><strong>Immigration Process</strong></td>
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<td>IP: Time, Reason</td>
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</tr>
<tr>
<td>IP: Social network</td>
<td>2.2</td>
</tr>
<tr>
<td>IP: Experience</td>
<td>2.3</td>
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<td>3.3</td>
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<tr>
<td>HB: Influence factors on health behaviors</td>
<td>3.4</td>
</tr>
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<td>OHB: Influence factors on oral health beliefs</td>
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<td>OHB: Influence factors on oral health behaviors</td>
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</table>
REFERENCES


