BRIEF COMMUNICATIONS

Use of Dental Care by Elderly Chinese Immigrants in Canada

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Abstract

Objectives: *This study examines the predictors for elderly Chinese immigrants' use of dental care services.* ***Methods:*** *In 2003, a study entitled "Health and Well Being of Older Chinese in Canada" collected data from seven cities in which 2,272 Chinese Canadians aged 55 years and older were surveyed. Data from 1,537 of these individuals were used to examine the use of dental care services by the elderly Chinese. Hierarchical logistic regression analysis was used to examine the predicting factors for use of dental care.* ***Results:*** *More than half (52.1 percent) of the elder Chinese immigrants did not use any dental care services within the past year of the study. Being older, living in Quebec, and having poorer physical health reduced the probability that an older Chinese immigrant would use dental care services. On the other hand, being an immigrant from Hong Kong, having lived in Canada for a longer period of time, strong social support, and having dental problems increase the probability of dental service use.* ***Discussion:*** *The findings support the need for considering the cultural characteristics and background of elderly Chinese immigrants when strengthening oral health promotion. This should encompass understanding of the holistic concept of health that includes oral health and its connections with other physical health issues.*

Key Words: aged, dental care, accessibility of health services, culture, elderly Chinese, Asian-Americans

Introduction

In 2005 (1), 13 percent of the Canadian population was aged 65 years or older, and this proportion is expected to increase tremendously. In 2001, 18.2 percent of the population was foreign born; and 13.3 percent of the population belonged to a visible minority group, defined as people non-White in race and nonaboriginal in ancestry (1). The Chinese belong to the largest visible minority group, accounting for 25.8 percent of all visible minorities (1). The elderly population in this group was 9.9 percent, 3 percent greater than the ratio reported for all visible minority groups. Although the National Population Health Survey (NPHS) and Canadian Community Health Survey (CCHS) 2.1 collected data on dental care use, information on elderly Chinese is limited as there was no oversampling for this ethnic group. This study aimed to assess the predicting factors of dental service use by elderly Chinese immigrants in Canada, because research in this area is lacking.

Methods

This study was based on the data collected between summer 2001 and spring 2002 in a research on health and well-being of older Chinese aged 55 and older in seven Canadian cities (2). A subsample of telephone numbers listed under Chinese surnames was randomly selected, based upon the size of the ethnic Chinese population and those 55 years and older in each city. Telephone screening was conducted to identify eligible participants. One participant from each household was randomly selected for a face-to-face interview.

An orally administered structured questionnaire was used. The questions were constructed in Chinese, translated into English, and translated back into Chinese to ensure consistency in meanings. In total, 2,272 participants completed the original study either in English or Chinese, representing a 77 percent response rate. The 1,537 Chinese immigrants born outside of Canada aged 65 or older were included in this study.

Measurements. Use of dental care was measured by whether or not the participants had used dental services in the past year. The participants were grouped as either user or nonuser. The inclusion of the predicting factor depended on the Andersen–Newman (3) service utilization framework, which specifies the three types of factors for health services utilization – predisposing factors, enabling factors, and need factors. The predisposing factors include gender, age, religion, marital status, living arrangement, education level, country of origin, length of residency in Canada, Chinese cultural values, and Chinese health beliefs. The categorical groupings of the nominal variables are presented in Table 1.

Chinese cultural values were measured by 11 self-constructed agree–disagree statements related to

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Table 1
Sociodemographic Information of Elderly Chinese Immigrants in the Sample and 2001 Census

	Elderly Chinese immigrant sample (n = 1,537)		Elderly Chinese immigrant population in census (n = 94,658)	
	Mean	%	Mean	%
Gender				
Female		55.8		52.7
Male		44.2		47.3
Age (in years)	74.1		72.9	
Religion				
Having a western religion		27.5		18.2
Having a nonwestern religion		32.4		28.1
Not having a religion		40.1		53.7
Marital status				
Single		42.9		32.8
Married		57.1		67.2
Living arrangement				
Not living alone		82.0		90.2
Living alone		18.0		9.8
Education				
No formal education		17.4		
Elementary		34.2		
Secondary		31.4		
Postsecondary and above		17.0		
Country of origin				
Mainland China		28.9		
Hong Kong		52.3		
Taiwan		4.1		
Vietnam		7.8		
Southeast Asia		3.6		
Other countries		3.3		
Length of residency (in years)	18.5			
Chinese cultural values (range: 1 to 5)	3.8			
Chinese health beliefs (range: 1 to 3)	2.5			
Self-rated financial adequacy (range: 1 to 4)	2.8			
Personal monthly income				
Less than $500		15.1		
$500 to $999		45.0		
$1,000 to $1,499		33.2		
$1,500 and above		6.7		
Self-rated English competency (range: 2 to 6)	4.0			
Social support (range: 5 to 15)	11.0			
Province				
British Columbia		34.0		
Alberta		27.7		
Manitoba		4.4		
Ontario		22.8		
Quebec		11.1		
Physical health (Physical Component Summary) (range: 0 to 100)	50.8			
Mental health (Mental Component Summary) (range: 0 to 100)	48.2			
Dental problem				
Not having a dental problem		59.3		
Having a dental problem		40.7		

beliefs and values such as language use, gender role, and parent–child relationships, along a five-point Likert scale, with a higher total score (between 1 and 5) indicating a stronger Chinese cultural values (Cronbach's alpha = 0.8). Chinese health beliefs were assessed by 12 self-constructed agree–disagree three-point Likert scale statements on health beliefs in eating, health maintenance, and functions of traditional Chinese medicine, with higher scores (between 1 and 3) indicating stronger Chinese health beliefs.

The enabling factors included self-rated financial adequacy, personal monthly income, self-rated English competency, social support, and location. Self-rated financial adequacy was measured by asking the participants to indicate how well their income and investments satisfied their financial needs, along a four-point ordinal scale ranging from "very inadequate" to "very well." Personal monthly income of the participants ranged along a four-point scale between "less than $500" and "$1,500 and above."

Self-rated English competency was assessed using two questions inquiring whether the participants were able to understand and speak English, from "very well," "a little bit," to "not at all." Scores were assigned to the answers to form an ordinal variable ranging from 2 to 6, with a higher score representing a higher level of English competency. Social support was measured by five questions adopted from the Older Americans Resources and Services Social Resource Scale (4) assessing family structure, patterns of friendship and visiting, availability of a confidant, and availability of a helper should the need arise. The higher the total score, ranging between 5 and 15, indicated a higher level of social support (Cronbach's alpha = 0.61). Location was the province where the participants resided.

Self-reported physical and mental health and a self-reported dental problem variable were measured to reflect need factors. Physical and mental health was measured by the Physical Component Summary (PCS) and Mental Component Summary (MCS) in a Chinese version of the Medical Outcome Study 36-item Short Form (5). These two scores range from 0 to 100, with higher scores indicating a better health status (Cronbach's alphas: PCS = 0.90, MCS = 0.85). A self-reported dental problem variable was measured by asking whether or not the respondent had a dental need.

Data Analysis. A hierarchical logistic regression was used, with use of dental care as the dependent variable. The predicting factors were entered in blocks, beginning with the predisposing factors, then the enable factors and need factors. Bivariate correlation coefficients were calculated for all independent variables and the low coefficients reported did not indicate the potential problem of multicollinearity.

Results

Table 1 indicates that the participants were a rather socioculturally diverse group. Their demographic characteristics were compared to the elderly Chinese immigrant population within the same age group (94,658), using data from the 3 percent 2001 Canadian Census public use data file. Among 1,537 participants, only 736 (47.9 percent) reported using dental care. Table 2 presents the significant predictors in the logistic regression models. Because of the large sample size, the significance level was set at $P < 0.01$. When only the predisposing factors were included in the model, having a postsecondary education level, being an immigrant from Hong Kong or Taiwan, and having lived in Canada longer increased the likelihood of dental care use.

Except for being an immigrant from Taiwan and having postsecondary and higher education level, all other predisposing factors in the first model remained significant when the enabling factors were added. Having a higher level of support also increased one's odds of using dental care. Living in Quebec reduced the likelihood of use.

In the third model, better physical health and mental health reduced the odds of using dental care. All the significant predisposing and enabling factors identified in the second model remained significant.

In the final model, adding the dental problem variable resulted in the largest amount of reduction in −2 Log likelihood, making this model fit with the data better than the previous three models. Except for mental health, all significant predicting factors in the third model remained significant. Being an immigrant from Hong Kong, having lived in Canada longer, higher social support, and having a dental problem would increase one's probability of using dental care. Being older, living in Quebec, and better general physical health were the predictors that reduced one's use of dental care.

Discussion

Table 1 indicates differences between the Chinese elderly population in the census and the sample in this study. It appears that through using a language matching the interviewing strategy, this study captured a more vulnerable segment (i.e., older in age, more women, and more living alone), who might be underrepresented in the census because of the language challenges and other sociocultural barriers.

The utilization rate of the participants is lower than the 59.1 percent reported by the general elderly Canadian population in the 2003 CCHS 2.1. However, as not all the predicting variables examined were available in CCHS 2.1, it is infeasible to compare the predictors identified in this study with the general elderly population.

Residing in Quebec reduces one's probability of using dental care. As a Francophone province, Quebec probably has fewer Anglophone and Chinese-speaking dental care providers than in other provinces, creating access problems for the elderly Chinese. A higher level of social support facilitates the use of dental care because it means more

Table 2
Logistic Regression Analyses of Using Dental Care by Older Chinese Immigrants (n = 1,537)

	Parameter estimate Odds ratio (95% confidence interval of odds ratio)			
	Model 1	Model 2	Model 3	Model 4
Block 1: Predisposing factors				
Age	ns	ns	ns	−0.03* 0.98 (0.96, 0.99)
Postsecondary and above education‡	0.75† 2.12 (1.41, 3.18)	ns	ns	ns
Migrated from Hong Kong¶	0.67† 1.96 (1.52, 2.52)	0.53† 1.69 (1.30, 2.20)	0.53† 1.69 (1.30, 2.21)	0.55† 1.74 (1.32, 2.29)
Migrated from Taiwan¶	0.96* 2.61 (1.45, 4.68)	ns	ns	ns
Length of residency in Canada (years)	0.02† 1.02 (1.01, 1.03)	0.02† 1.02 (1.01, 1.03)	0.02† 1.02 (1.01, 1.03)	0.03† 1.03 (1.01, 1.04)
Block 2: Enabling factors				
Social support (range: 5 to 15)	–	0.16† 1.17 (1.11, 1.24)	0.17† 1.19 (1.12, 1.25)	0.15† 1.16 (1.10, 1.22)
Resided in Quebec§	–	−0.95† 0.39 (0.25, 0.59)	−1.00† 0.37 (0.24, 0.57)	−0.80† 0.45 (0.29, 0.70)
Block 3: Need factors				
Physical health (Physical Component Summary) (range: 0 to 100)	–	–	−0.02* 0.98 (0.97, 0.99)	−0.02* 0.98 (0.97, 0.99)
Mental health (Mental Component Summary) (range: 0 to 100)	–	–	−0.02* 0.99 (0.97, 1.00)	ns
Block 4: Dental problem				
Having a dental *f* problem•	–	–	–	1.02† 2.78 (2.20, 3.52)
−2Log likelihood	2,005.06†	1,932.75†	1,909.42†	1,833.66†
Change of 2 Log likelihood; *df*	91.09; 17	72.31; 10	23.33; 2	75.76; 1

* $P < 0.01$.
† $P < 0.001$.
‡ No formal education.
¶ Mainland China.
§ Resided in British Columbia.
• Not having a dental problem.
ns, not significant; –, variable not entered in this model.

care by support networks that have knowledge about the importance of dental care.

Immigrants from Hong Kong were more likely to use dental services than those who migrated from mainland China, as they may be more exposed to dental services prior to immigration than those from mainland China. The longer one lives in Canada, the more likely one is exposed to health practices such as having dental examinations. This suggests that newer elderly Chinese immigrants should be targeted for promotion of dental hygiene and use of appropriate dental services.

Having a dental problem increased the odds of using dental care, but dental care use was lower for those having better general physical health. This may be explained by the common belief among many elderly Chinese elderly who think that dental problems such as bleeding gums and total tooth loss were normal and an unpreventable part of aging (6–8). Another possibility is that the physically healthy elderly Chinese immigrant may think that they must also be orally healthy. Although this subpopulation appears to be open to a holistic health perspective, oral health may not be included at the moment. Health promotion should therefore emphasize the holistic concept of health specifically including dental health. Community health education strategies should fit with the cultural health beliefs of the elderly Chinese immigrants who are probably less likely to have knowledge about the value, function, and availability of existing dental care services.

Limitations in interpreting results of the study included relatively low odds ratios, use of the self-reported method to measure dental care use, and lack of clinical assessment on dental health status. Finally, because specific cultural beliefs toward dental care use were not examined, their influence on dental care use remains unclear, and additional in-depth research is recommended.

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