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Explanatory Models of Health and Disease
among Elder Chinese Immigrants in the Bay Area

by

Melinda Ho Ye Kong

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Abstract

Explanatory Models of Health and Disease
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by

Melinda Ho Ye Kong

Master of Science in Health and Medical Science

University of California, Berkeley

Dr. Susan L. Ivey, MD, MHSA, Chair

The purpose of this study is to identify concepts of health and disease as part of a study on designing culturally-targeted diabetes prevention messages for elder Chinese American immigrants. This pilot study consists of 3 focus groups, consisting of 16 respondents who were snowball sampled from a community center serving Chinese American immigrants in Oakland, CA. Age ranged from 60 to 81 years; 69% were women; 63% of the participants had completed junior high school level education; 50% migrated to the US within the last 25 years; Concepts of health and disease of the focus group participants are categorized into four Thematic Areas: 1) Perceptions of Health 2) Perceptions of Illness 3) Taking Care of Health 4) Perception of Diabetes & Preventing Diabetes.

Key findings of the study include: Elder Chinese-American immigrants perceive that health is defined by having good energy and mobility and is defined by the body's resiliency to deal with changes to the environment. Many elders believe that eating a healthy diet in terms of getting the right nutrition and eating the appropriate types of food for an individual or the environment is key to health. They also believe that having a regular exercise routine (such as hiking or dancing) is important to maintaining health. Elder Chinese define illness as lacking energy and lacking the ability to deal with environmental factors such as changes in weather or introduction to pathogens, or stressful family or work place. Elder Chinese-American immigrants perceive that illness is caused by events such as excessive heat or excessive cold in the body that may be caused by poor diet or by the environment and by poor health behavior habits. Treatment is from change in diet, exercise, or from medicine. Many Elders believe that maintaining health is not just diet and exercise, but rely on maintaining other healthy behaviors such as maintaining adequate and good quality sleep, maintaining regular medication/vitamin regimen, and finding individual activities

or activities with family and friends to maintain a state of relaxation and *hoy sum (happiness* 開心)。Diabetes is understood among the participants to be a disease to which an individual may be susceptible due to health-related behaviors, genetics, environment. The elder Chinese participants of this study understand that there is an excess of sugar in the body that is causing the disease. The participants also believe that increased cholesterol levels may play a part in the cause of the disease. A majority of the participants agreed that diabetes is most likely due to poor diet and lack of exercise.

These findings can be used to help educate health care providers in order to provide more culturally competent health care as well as help improve public health initiatives. By providing more culturally competent health care for this population of elder Chinese American immigrants, we can increase adherence to nutritional advice and behavior changes that providers may give as a form of prevention of diabetes or other types of diseases.

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PAPER 1 – RESEARCH BACKGROUND

I. Introduction to Asian Americans

Asian Americans are the fastest growing racial group in the U.S (US Census Bureau, 2010). According to the 2010 U.S. Census, as of April 1, 2010 there are 14,674,252 Asian Americans up from 10,242,998 from the 2000 U.S. census. The total U.S. population grew by 9.7 percent from 281.4 million in 2000 to 308.7 million in 2010. In comparison, the Asian American population increased more than four times faster than the total U.S. population, growing by 43 percent. Asian Americans represent about 4.8 percent of the total U.S. population and based on the 2009 National Population Projections from the 2000 U.S. Census data the Asian population is projected to increase by 79 percent between 2000 to 2050. California is the state with the highest total number of Asians in the U.S. with 5.6 million, accounting for 32.1 percent of all Asian Americans in the U.S. (US Census Bureau, 2010). Asian Americans are distinguished from other racial groups by several characteristics: according to the 2010 U.S. Census, "Asian" refers to a person having origins in any of the original peoples of the Far East, Southeast Asia, or Indian subcontinent, including, for example, Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam (US Census Bureau, 2010). Asian Americans had the highest proportion of foreign-born among all racial groups (approximately 59.9%), which is far higher than the proportion of citizens (12.5%) in the overall U.S. population (U.S. Census Bureau, 2010). Asian Americans is the second largest minority group in California, and make up one in seven Californians. Thus the health of Asian Americans in California matters a great deal.

In the United States, racial and ethnic minorities receive lower quality health care and suffer worse health outcomes than white Americans, even when access to care is adequate (Smedley, Stith & Nelson, 2003). A common American myth is that Asians are healthier than all other racial/ethnic groups in the United States, often referred to as the *model minority myth*, a term coined by sociologist William Peterson in 1966 (Peterson 1966). Peterson argued that because Asian Americans come from cultural heritages with an emphasis on a strong work ethic and focus on family values, they are able to overcome many obstacles faced by immigrants and avoid becoming the "problem minority." Decades later, many scholars such as Lin-Fu (1988) and Fujimoto (1987) published research which disputed the concept of the Asian model minority myth and idea that Asian Americans are healthier than the general population. In Fujimoto et al's research, they found that elder Japanese-America men have higher rates of type 2 diabetes and prostate cancer than the general population (Fujimoto et al. 1987). Lin-Fu's article asserted that much of the research conducted on the Asian American population was gathered from a very limited set of data comprised of mainly Japanese-born, Japanese living in Hawaii, and the general U.S. population thus leading to an imprecise perspective on the diverse populations

categorized under the umbrella term "Asian American." Lin-Fu warned that the misinterpretation of an incomplete set of data on Asian Americans and each subset found in the population has led to a poor understanding of this population. This egregious oversight has lead to the inattention and neglect of health problems and health care needs of this minority population (Lin-Fu 1988).

Looking specifically at a subsection of Asians, Chinese immigrants in the United States (those who have immigrated from China, Taiwan, or other Asian regions with a large ethnic Chinese population) are not only one of the fastest growing groups of immigrants in the US, but they also experience a higher incidence of cancers of the oral cavity and pharynx, stomach and liver and higher rates of tuberculosis, hepatitis B virus (HBV), and diabetes than other U.S. immigrant groups with the exception of Latin-American immigrants. (Zane, Takeuchi, & Young, 1994). Juxtaposed against these high rates of diseases are data showing that Chinese immigrants in the US do not have the health knowledge necessary to manage their health problems and perform self-care activities, especially in relation to hepatitis B and diabetes (Ralston et al 2003; Back 2001; Thompson 2002)?

Although patients require knowledge and education about how to care for their health, barriers such as language, unfamiliar and intimidating health care systems, and certain cultural practices inhibit access to and understanding complex health information for immigrant populations in the United States, including Chinese immigrants (Kim & Keefe 2006). Approximately 76% of Chinese immigrants in the US do not speak English fluently **(**US CENSUS BUREAU, 2010**).** Without culturally and linguistically appropriate health education Chinese immigrants are less likely to successfully manage their unique health issues.

Due of the relatively recent immigration of Asians to America, a majority of the elder population within this ethnicity (with the exception of Japanese-Americans) are immigrants to the United States (Shibusawa T & Chung I 2009). Asian Americans are the fastest growing subgroup among elders in the US. According to the U.S. Census Bureau, Asian American elders represents 3 percent of the elderly population and this number is projected to increase to 8 percent by 2050. This being said, it is well known that aging increases the risk of chronic physical and mental disorders. As this immigrant population ages, not only are they at risk for diseases that are known to disproportionately affect Asian populations such as Hepatitis B, Liver cancer, and diabetes, but are also at risk for major health issues that are known to affect the general elder population such as increased rates of disabilities and depression. Functional disabilities are assessed in terms of activities of daily living (ADL), which include activities such as grooming, dressing, feeding, bathing, walking and continence. 23% of adults between the ages of 65-74 experience ADL difficulties (Shibusawa & Chung 2009). According to the US census, 35% of Asian Americans ages 65 and older reported at least one disability. One research paper found that foreign-born Asian

elders reported even higher rates of disabilities compared to their U.S. born counterparts (Mutchler et al 2000).

Another major health concern for elders is depression. In the general population about 15-27% of elders in the US experience mild depressive symptoms (Lebowitz et al. 1997). Recent research suggests that Asian American elders have higher rates of depression than the general population of elders (Mui & Kang, 2006). Depression has also been found to be positively associated with lack of social support, with recency of immigration status, and higher degree of acculturation (Saechoy et al 2012, Nguyen 2011), which puts elder Asian American immigrants at a greater risk for depression thus emphasizing the need for more attention to providing not just adequate health care and health care access, but also culturally competent health care.

As I have mentioned before, degree of acculturation may play a role in changes to risk of certain diseases to Asian American immigrants, especially elders. Acculturation is defined as the process by which individuals adopt the attitudes, values, customs, beliefs and behaviors of another culture (Nguyen 2011). Available data indicate that change in diet and increase in a sedentary lifestyle after immigration can influence the health of Asian American elders (Shibusawa & Chung 2009, Van Dam RM 2002). One example is that high rates of type 2 diabetes among older Japanese American men are attributed to increased fat intake (Fujimoto et al 1987; Maskarinec 2009). Another research paper found a correlation between increased degrees of acculturation with increased BMI among Asian Americans, with the strongest association among Chinese (out of Koreans, Chinese, and Vietnamese populations included in this study) (Chen et al 2011).

Although a large part of the introduction has been spent describing the increased risks of health issues found within the Asian-American population, especially in the elder population, I am not saying that genetics are the culprit for the discrepancy between this population and the general population. The studies on acculturation and its affect on the health of the Asian-American population compared to their counterparts in Asia suggests that nutrition, health behaviors, and access to health care may have a role in health outcomes. In order to improve the health of Asian Americans it is important to understand the Explanatory Model of health and disease. With this understanding, health care providers can provide cultural competent healthcare and improve access and delivery.

In this section will explore the literature on health beliefs and use the medical anthropological idea of understanding the Explanatory Model of a patient. This section will also review the literature on Asian American health disparities focusing specifically on diabetes within the Asian-American population and the role of cultural competency in reducing it. In order to provide culturally competent health care for a specific population, the health care providers and the public health care sector must first understand the belief systems of this specific

immigrant population.

II. Explanatory Models of Health and Disease

The recent attention on the importance of understanding the patient perspective was influenced predominately by the work of medical anthropologist Arthur Kleinman. He argued that a medical system was a complex system influenced by not only a standard body of biomedical knowledge, but also influenced by the interaction of the medical belief systems of the patient and the practitioner. In his influential work written about his experience observing the medical and health systems in Taiwan in the 1970s, Kleinman coined the term "Explanatory Model" when describing the medical belief systems of the patient and the practitioner. His theory of EMs posits that patients can have different ideas of the basis of health and disease than the "standard" understanding of health and disease from the predominant medical system, influenced by their cultural background and their social situation:

> Explanatory models are the notions about an episode of sickness and its treatment that is employed by all those engaged in the clinical process. The interaction between the EMs of patients and practitioners is a central component of health care. (Kleinman 1980)

According to Kleinman, health care is a cultural system that includes patterns of belief about the causes of illness; norms governing choice and evaluation of treatment; socially legitimated statuses, roles, power relationships, interaction settings and institutions. In his model, health care systems contain three overlapping spheres: the popular; the folk healers; and the professional. From each sphere comes about a unique "clinical reality" which is an amalgam of an individual and a society's social, physical, and psychological reality.

The individuals partaking in the medical system interactions, whether patients or practitioners, constantly navigate through these spheres of influence, condensing and compiling views taken from their own worldviews and all the clinical realities they encounter. "All of this affects the way individuals think about and react to sickness and choose among and evaluate the effectiveness of the health care practices available to them" (Kleinman, 1980). The type of EM held by a patient may influence his receptivity to health promotion messages and health behaviors (Tirodkar 2010). By understanding a patient's EM, health care professionals can better evaluate and develop treatment plans that patients are more likely to follow.

According to Kleinman, in order to understand a patients EM, there are five core issues to form a whole model: 1) belief of etiology; 2) time and mode of onset of symptoms; 3) pathophysiology; 4) course of sickness (including both degree of severity and type of sick role -- acute, chronic, impaired, etc); and 5) treatment (Kleinman 1980). Studies have shown that EMs play a large role in the

type of healer a patient will visit and course of treatment a patient will adhere to (Tirodkar 2010). Understanding EMs can play a crucial role in enhancing access to health care, while also improving cultural competency in the medical field. This knowledge can also be used in developing educational tools in prevention and management of diseases.

III. Barriers to Healthcare access among Asian Americans

According to Kim and Keefe, there are 4 major barriers to healthcare among Asian Americans: health insurance, immigrant status, language/culture, and health literacy (Kim and Keefe 2010). The following sections will describe in detail the barriers and explain to what extent these barriers can affect elder Asian-American immigrants.

Health Insurance

The status of insured and uninsured is a major determinant of accessing medical care. In the United States, we have struggled with the issue of providing universal health care, and currently have only limited access. Though the health insurance system is based on employment in America, it is not the best predictor of health insurance for Asian Americans (Kim and Keefe 2010). Many Asian Americans work for small businesses or have low-wage jobs with no benefits.

Elder Asian Americans may not have this issue because they have access to the government run program, Medicare. Medicare covers elders 65 years or older, and cover naturalized citizens and lawfully admitted immigrants (US Dept Health Services 2005). Although there is access to government health coverage, not all elder Asian Americans are eligible. Recent elder Asian-American immigrants may not have access to health insurance if they have not worked at least 10 years in Medicare-covered employment. Without coverage, elder Asian-American immigrants are unlikely to seek medical care.

Immigrant Status

There are 3 types of Asian Americans: immigrants who voluntarily choose to come to America, immigrant refugees forced to flee, and descendants of immigrants (Kim and Keefe 2010). Study results based on a telephone survey of Chinese American residents of San Francisco suggest that the access to healthcare for the first two immigrant groups is most affected by their immigrant status. The researchers believe that acculturation may be related to healthcare access. Having a regular source of healthcare was statistically related to immigration status. 87.3% of U.S.-born residents had a regular source of healthcare compared to 65.0 % of noncitizens (Jang 1998). Reasons given in the interview in this study included lack of health insurance, being new to the area, language difficulties, unavailability of a nearby clinic, and skeptical attitudes toward Western doctors (Jang 1998).

This is significant for elder Asian Americans because a larger percentage of

elder Asian Americans tend to be immigrants to America (Kim and Keefe 2010). Data from a National Health Interview Survey indicated that immigrants from Asian and Pacific Island countries were found to be in better health than the US born Asian and Pacific islanders but their health advantages consistently decreased with duration of residence (Frisbie 2001). This information in addition to Fujimoto's study that the prevalence of diabetes among Chinese immigrants were greater than that of their counterparts living in China supports that being an immigrant can not only effect access to healthcare but can also effect health risk (Fujimoto et al 1996) Elder Asian-American immigrants are less likely to have healthcare access yet are at greater risk for chronic diseases such as diabetes as their length of time of residence increases.

Language/Culture

Language is identified as one of the major barriers for Asian-American immigrants in accessing healthcare (Kim and Keefe 2010, Jang 1998). Either English-proficiency or access to interpreters is necessary for help seeking in the healthcare environment. Without the appropriate language skills or access to interpreters, locating clinics, making an appointment, communicating with health professionals, and improving knowledge on health and disease will be difficult (Kim and Keefe 2010).

Even with English-proficiency and appropriate interpreter services, immigrants may refrain from asking questions about their health (Green 2005) due to discomfort in the health clinic. Lack of culturally competent healthcare can be an additional barrier. Asian American immigrants may have difficulty understanding the medical system and may not have the knowledge to understand the basis of disease and treatment. Having a health professional who understands Asian-American culture can help remove these barriers and improve delivery of medical care (Kim and Keefe 2010).

For elder Asian-American immigrants, both language and culture may be barriers to receiving medicine and medical advice. Elder Asian-American immigrants are least likely to be proficient in English (Jones et al 2006). They may also hold different beliefs about health and disease and may only seek attention when their symptoms are very severe. (Han et al 2007).

Health Literacy

Health Literacy is defined as the ability to understand health information and to use that information to make good decisions about one's health and medical care. For immigrants, health literacy is tied to language and culture (Kim and Keefe 2010). Just as language is necessary for access to healthcare, understanding content and context of specific medical situations is also important. Research has shown that Asian Americans have limited health literacy, which can prevent them from seeking medical services and advice (Jones et al 2006, Han et al 2007).

Elder Asian-American immigrants tend to have different explanatory models of health and disease brought over from their homelands, and these EMs may conflict with American ideas of health and disease (Han et al 2007). It is important to understand these EMs and find a bridge for elder Asian-American immigrant patients and health care providers in order to provide appropriate medical intervention and prevention. Patient education and cooperation in behavioral modification is key to prevention and management of diabetes.

IV. Type 2 Diabetes Mellitus
Type 2 diabetes mellitus is one of the most challenging health problems worldwide. Currently there are over 220 million people worldwide living with diabetes (WHO Fact sheet 2005). In 2005, an estimated 1.1 million people have died from this chronic degenerative disease. The World Health Organization (WHO) projects that patients with diabetes will double between 2005 and 2030 (WHO Fact sheet 2005). This trend is attributed to an increase in obesity in populations. Diabetes is a growing concern found worldwide, and is also a concern in America. In the USA, 23.6 million (7.8%) Americans had diabetes in 2007 (National Institute of Diabetes and Digestive and Kidney Diseases 2007). Lately the increased prevalence of diabetes among Asian Americans has gained much attention. Research has shown that Asians have an increased susceptibility to type 2 diabetes (Rajpathak 2010) and recent data has shown that the elder Asian Americans had the highest increase in prevalence of diabetes from 1993 to 2001 compared to other ethnic groups (McBean 2004). In the following section I will discuss the complex public health problem that elder Asian Americans are at a higher risk for type 2 diabetes than the general non-Hispanic white elder population, and are at a disadvantage for treatment of this disease because they are more likely to have lack of access to health care.

Type 2 Diabetes Mellitus and Elder Asian American Immigrants
Type 2 diabetes mellitus is characterized by hyperglycemia, insulin resistance, and relative impairment in insulin secretion. Its pathogenesis is poorly understood, but both genetic factors affecting insulin release and responsiveness and environmental factors such as obesity are important (McCulloch and Robertson 2010). Risk factors for type II diabetes include a variety of lifestyle factors such as reduced exercise and smoking (McCulloch and Robertson 2010). Dietary patterns may affect the risk of type 2 diabetes mellitus. A "western diet" consisting of high consumption of red meat, processed meat, high fat dairy products, and sweets is associated with and increased risk of type 2 diabetes (Van Dam RM 2002). Diagnosis of obesity plays a large role in diagnoses of type 2 diabetes. It is classified as having a Body Mass Index (BMI) of greater than 30 kg/m2 (Bray 2010). Obesity acts at least in part by inducing resistance to insulin-mediated glucose uptake, which is an important component of type 2 diabetes. Reversal of obesity decreases the risk of type 2 diabetes and improves glycemic

control (McCulloch and Robertson 2010).

There are genetic risk factors to type 2 diabetes as well. One study emphasizes the importance of family history in predicting type 2 diabetes (Li 2000). Patients with type 2 diabetes who had no family history of type 1 or type 2 diabetes were older at onset and had preservation of endogenous insulin secretion as compared with patients who had a family history of diabetes. Ethnicity may also play a role in increased risk of type 2 diabetes. Data from a prospective cohort study found that the risk for developing diabetes was increased for Asians, Hispanics, and blacks (RR 2.26, 1.86, and 1.34, respectively) compared to non-Hispanic whites (Shai 2006).

Although there is not a great deal of literature written on race and ethnicity as a risk factor, there is a growing recognition that being Asian American can increase the risk of type 2 diabetes. The prevalence of diabetes among Asian Americans is 1.6 times that of non-Hispanic white Americans (McNeely and Boyko 2004). The underlying reason why Asian Americans are more susceptible is not understood. As mentioned previously, obesity is a major risk factor to developing type 2 diabetes, yet Asian Americans tend to develop diabetes even if they have a low BMI (McNeely and Boyko 2004, Muskarinec 2009). Some researchers suspect that environmental factors such as diet may play an important role in the development of diabetes in Asian Americans. For example, the prevalence of diabetes among Chinese immigrants was 5-7 times that of their counterparts living in China (Fujimoto 1996). Changing to a "western diet" may increase the risk of developing type 2 diabetes.

Elder Asian Americans seem to be at greater risk of developing type 2 diabetes. This group had the highest increase in prevalence of diabetes from 1993 to 2001 compared to Hispanics, blacks, non-Hispanic whites, and other ethnic groups. During a 7 year period, elder Asian Americans (≥ 67 years of age) had a 68.0% increase in prevalence (McBean 2004). Elder Asian Americans tend to be immigrants based on the migration patterns of the 20th century (Kim & Keefe 2010), and as stated previously Asian immigrants to America have a higher prevalence of diabetes and impaired fasting glucose compared to their counter parts in Asia (Fujimoto 1996, Rajpathak 2010). The growing problem of rising prevalence of diabetes among elder Asian Americans is compounded by the fact that there are many barriers to healthcare access among Asian Americans. In the next section, this paper will discuss the barriers to healthcare access and focus on aspects of elder Asian American immigrants.

V. Prevention and Management of Type II Diabetes

Type II diabetes is considered a chronic degenerative health problem. As mentioned previously, this disease is defined by increased levels of blood glucose (hyperglycemia) and insulin receptor resistance. Hyperglycemia itself is not an emergency issue, but the effects of prolonged hyperglycemia are devastating. Prevalence of cardiovascular disease, retinopathy, nephropathy,

and amputation of limbs increases progressively with increasing duration of diabetes. (McCulloch and Munshi 2010).

Elders with diabetes are at risk of developing a similar spectrum of macrovascular and microvascular complications as their younger counterparts with diabetes. However, their risk for cardiovascular disease is much higher than younger adults. Elders with diabetes suffer higher morbidity and mortality compared with elders without diabetes (Bethel et al 2007). In addition, they are at high risk for functional disabilities and common geriatric syndromes that include cognitive impairment, depression, urinary incontinence, falls, and persistent pain (McCulloch and Munshi 2010). It is therefore imperative to prevent these health issues by early detection of hyperglycemia and constant maintenance of blood sugar levels.

Although development of insulin receptor resistance may have genetic factors, it is well known that behavioral changes in diet and exercise can ameliorate some of the effects of insulin resistance (McCulloch and Robertson 2010). Patient education is important when discussing risk factors of type II diabetes. When managing type II diabetes, regular physician visits are necessary to develop an individualized plan to regulate blood sugar levels. Patients must be educated in drug therapy, dietary modification (such as reduction of processed carbohydrates and simple sugars), and behavioral modifications (smoking cessation, increased exercise) (McCulloch and Munshi 2010).

Because elder Asian Americans as a group had the highest increase in the prevalence of diabetes (McBean 2004) it is important to focus on prevention and management when treating these patients. This fast growing epidemic of diabetes underscores the need for elder Asian-American immigrants to have access to medicine and medical advice. Research taken from surveys has suggested that self-management practices among Asian-American type 2 diabetics are suboptimal most likely because of lack of education (Xu 2010). Figure 1 depicts a concept map of healthcare access for elder Asian American immigrants. As previously discussed there are some barriers to health care access for elder Asian American immigrants, researchers have suggested that by understanding the patient's culture and EM of health and disease, health care providers can provide culturally competent health care and develop culturally targeted public health messages (Tirodkar 2010) to help prevent and manage type II diabetes among Asian-American, especially in the elder immigrant group.
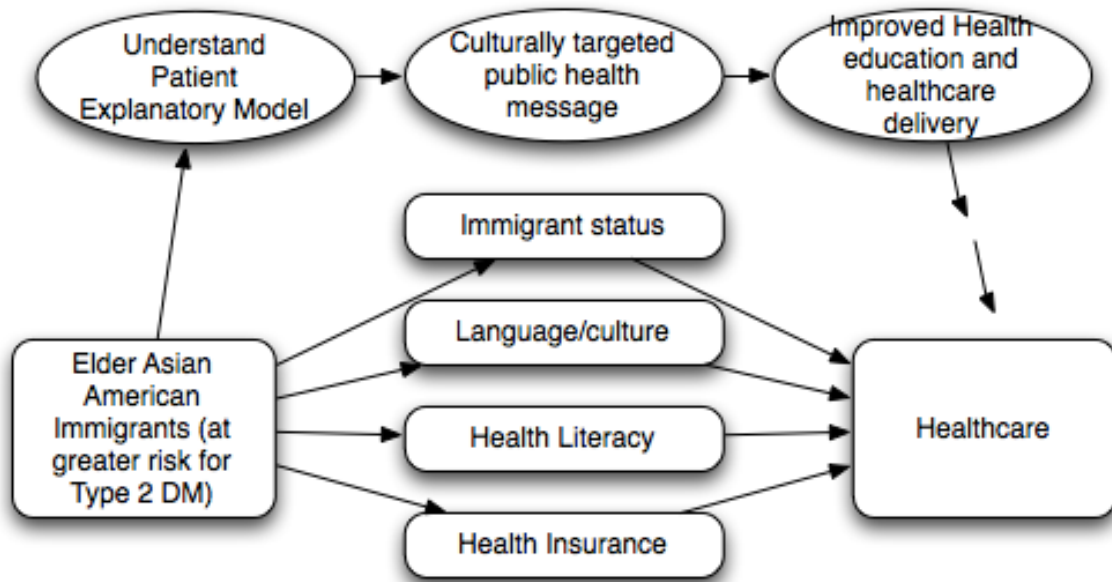
Fig. 1 - Concept Map of methods to accessing healthcare for Elder Asian-American immigrants.

In order to provide this type of specific care, we need more research focusing on the elder Asian-American immigrants. One starting point is to understand their culture and EMs of health and disease.

VI. Acculturation

As mentioned in the introduction, acculturation can play a role in influencing the health of an individual within the Asian American population as well as have large effects on the steps for prevention and management of diabetes. Current accepted definition of acculturation within public health is described as the process that individuals adopt the attitudes, values, customs, beliefs and behaviors of another culture (Nguyen 2011). According to the generally accepted model in public health, acculturation can be measured by an individual's English language origin. It is influenced by factors including birthplace (nativity, whether foreign born or American born), age of immigration length of stay in US, or immigrant status (Ma & Dause 2009). Based on this definition, high levels of acculturation within the Asian population in the US have been correlated with greater use of mental health services and cancer screen by Asian immigrants (Ma & Dause 2009). Conversely, as I mentioned in the introduction Asian immigrants experience declining health the longer they live in the United States and are at greater risk for developing type 2 diabetes than their counterparts in Asia (Van Dam RM 2002; Chen et al 2011). These two conflicting outcomes point to the weaknesses of the over simplistic acculturation classification that has been presented.

Acculturation has largely been studied in the Hispanic populations and is a complex concept. It was previously defined in a simplistic single dimensional way, classifying individuals along a spectrum from completely acculturated to not acculturates. Cabassa calls this single dimensional model a "zero sum game" where the individual is only affected by one cultural heritage (Cabassa 2003). This model does not account for multi cultural influences on an individual and the difference in weight of the different cultures, which may vary from individual to individual.

In order to capture this complex mullti-cultural effect, researchers have recently developed multi-dimensional models to assess how immigrants assimilate pieces of the dominant culture independent of their adherence or loss of the culture of their birth country. Portes and Zhou's concept of segmented assimilation addresses some of the limitations of the unidimensional acculturation model. Based on Portes and Zhou paper (1993), they describe three possible patterns of assimilation: (1) Upward – which is a move toward White middle-class culture coupled with upward socioeconomic mobility; (2) Downward – which is toward ethnic minority culture with lower socioeconomic status; or (3) Resistance – a resistance to assimilation through preservation of values of the immigrant population. Downward assimilation is often the outcome for immigrants with low social and economic status. Regardless of what acculturation model we may use in the health sector, it is imperative that we understand the myriad of cultural backgrounds of the Asian American in order to appropriately apply and correlate acculturation to effects on health. Not only is this a plea for better understanding acculturation, but also a plea for a better understanding of the separate cultural identities listed under the umbrella term, "Asian American."

VII. Applying EMs to Elder Asian-American Immigrants

Applying EMs to improve cultural competency in health care has been done among peoples of different race and ethnic groups. One study used qualitative interviews to elicit EMs among South Asian immigrants in order to better provide culturally aware public health prevention messages on cardiovascular disease (Tirodkar 2010). Currently there are no studies like this done for elder Asian-American immigrants. One literature review established EMs and explained cultural beliefs of Asian-born women in the US in hopes that health care providers can use the finding to improve health care utilization among Asian-born women (Zhao et al 2010).

By discovering the commonalities among the EMs of elder Chinese-American immigrants, physicians can improve health care access by providing culturally competent medical advice. Though this seems indirectly involved, understanding of EMs can be vital to developing prevention and treatment plans of chronic degenerative disease such as type II diabetes among this immigrant group.

VIII. Disaggregated data: Chinese American Immigrants

Throughout this paper I have used the term Asian American and sometimes I have identified the specific ethnicity such as Chinese American or Japanese American. One of the key issues to the problems with misrepresentation and misinformation within Asian American research and dataset that Lin-Fu (1988) expressed is the paucity of disaggregated data (Lin-Fu 1988, Islam 2010). Asian Americans are an umbrella term for a myriad of ethnically separate groups such as Japanese, Filipino, Chinese, and Cambodian to name a few. Three ways to improve the power and accuracy of the data set: (1) Pool/link the datasets to allow for meaningful analysis of health issues among Asian American subgroups (2) Accurately identify race and ethnicity with standardized categories which can facilitate compilation and comparison of high-quality data (3) Use of innovative sampling strategies such as targeted samples. Innovations in sampling strategies can lead to improvements in the effective sample size of the Asian Americans in the research study (Islam 2010). Improving the accuracy of the Asian-American dataset and research to reflect the diversity of this population will lead to improvements in the development of health programs and in policy efforts. Moreover, an improved understanding of this population can prevent health disparities and other health issues that were originally masked by conglomerate data.

Paper 1 - Conclusion
Elder Asian immigrants in America are at higher risk for the chronic degenerative disease Type II diabetes but are generally not screened because they do not fall within the typical ranges of BMI of "at risk" patients and often have little to no access to health care. Understanding the patient's explanatory model may help improve targeted health education programs for this population and may also help physicians become better equipped in dealing with this population by increasing adherence to treatment protocol by working together within their own cultural medical beliefs.

Research
While doing research for this paper I discovered that there is very little written on elder populations in general, and nearly nothing written on elder Asian Americans. More research should focus on the elder population, seeing as the baby-boomer generation has just reached retirement age and geriatric medicine will be in greater demand.

There is also a need for disaggregated data. From this paper, we have learned that it is rare to see research done separating Asians from the general population, but even rarer to find disaggregated data on sub-groups of Asian Americans. An interesting question would be to find out if a sub-group of elder Asian Americans are at more risk for type II diabetes than other groups.

Finally, for my research, I hope to identify concepts of health and disease among the Bay area elder Chinese American immigrants as part of a study on designing culturally targeted diabetes prevention and self-care messages.

PAPER 2 – RESEARCH STUDY

I. BACKGROUND REVIEW

As mentioned in Paper 1, Asian Americans are the fastest growing racial group in the U.S (US Census Bureau, 2010). According to the 2010 U.S. Census, as of April 1, 2010 there are 14,674,252 Asian Americans, up from 10,242,998 from the 2000 U.S. census. The total U.S. population grew by 9.7 percent from 281.4 million in 2000 to 308.7 million in 2010. In comparison, the Asian American population increased more than four times faster than the total U.S. population, growing by 43 percent. Asian Americans represent about 4.8 percent of the total U.S. population. Based on the 2009 National Population Projections from the 2000 U.S. Census data, the Asian population is projected to increase by 79 percent between 2000 to 2050. California is the state with the highest total number of Asians in the U.S. with 5.6 million, accounting for 32.1 percent of all Asian Americans in the U.S. (US Census Bureau, 2010).

Although there is not a great deal of literature written on race and ethnicity as a risk factor, there is a growing recognition that being Asian American can increase the risk of type 2 diabetes. The prevalence of diabetes among Asian Americans is 1.6 times that of non-Hispanic white Americans (McNeely and Boyko 2004). The underlying reason why Asian Americans are more susceptible is not understood. As mentioned previously, obesity is a major risk factor to developing type 2 diabetes, yet Asian Americans tend to develop diabetes even if they have a low BMI (McNeely and Boyko 2004, Maskarinec 2009). Some researchers suspect that environmental factors such as diet may play an important role in the development of diabetes in Asian Americans. For example, the prevalence of diabetes among Chinese immigrants was 5-7 times that of their counterparts living in China (Fujimoto 1996). Changing to a "western diet" may increase the risk of developing type 2 diabetes.

Elder Asian Americans and Type 2 diabetes

Elder Asian Americans seem to be at greater risk of developing type 2 diabetes. This group had the highest increase in prevalence of diabetes from 1993 to 2001 compared to Hispanics, blacks, non-Hispanic whites, and other ethnic groups. During a 7-year period, elder Asian Americans (≥ 67 years of age) had a 68.0% increase in prevalence (McBean 2004). Elder Asian Americans in the US tend to be immigrants based on the migration patterns of the 20th century (Kim & Keefe 2010), and as stated previously Asian immigrants to America have a higher prevalence of diabetes and impaired fasting glucose compared to their counterparts in Asia (Fujimoto 1996, Rajpathak 2010). The growing problem of rising prevalence of diabetes among elder Asian Americans is compounded by the fact that there are many barriers to health care access among Asian Americans.

Type 2 diabetes is considered a chronic degenerative health problem. Elders with diabetes are at risk of developing a similar spectrum of macrovascular and microvascular complications as their younger counterparts with diabetes. Their risk for cardiovascular disease is much higher than younger adults. Elders with diabetes suffer higher morbidity and mortality compared with elders without diabetes (Bethel et al 2007). In addition, they are at high risk for functional disabilities and common geriatric syndromes that include cognitive impairment, depression, urinary incontinence, falls, and persistent pain (McCulloch and Munshi 2010). It is therefore imperative to prevent these health issues by early detection of hyperglycemia and constant maintenance of blood sugar levels.

Although development of insulin receptor resistance may have genetic factors, it is well known that behavioral changes in diet and exercise can ameliorate some of the effects of insulin resistance (McCulloch and Robertson 2010). Patient education is important when discussing risk factors of type 2 diabetes. When managing type 2 diabetes, regular physician visits are necessary to develop an individualized plan to regulate blood sugar levels. Patients must be educated in drug therapy, dietary modification (such as reduction of processed carbohydrates and simple sugars), and behavioral modifications (such as smoking cessation, increased exercise) (McCulloch and Munshi 2010).

Because elder Asian Americans as a group had the highest increase in the prevalence of diabetes (McBean 2004) it is important to focus on prevention and management when treating these patients. This fast growing epidemic of diabetes underscores the need for elder Asian-American immigrants to have access to medicine and medical advice. Research taken from surveys has suggested that self-management practices among Asian-American type 2 diabetics are suboptimal most likely because of lack of education (Xu 2010). Figure 1 depicts a concept map of health care access for elder Asian American immigrants. Following this concept map, there are some barriers to health care access for elder Asian American immigrants (as discussed in Paper 1) researchers have suggested that by understanding the patient's culture and EM of health and disease, health care providers can provide culturally competent health care and develop culturally targeted public health messages (Tirodkar 2010) to help prevent and manage type 2 diabetes among Asian-American, especially in the elder immigrant group.
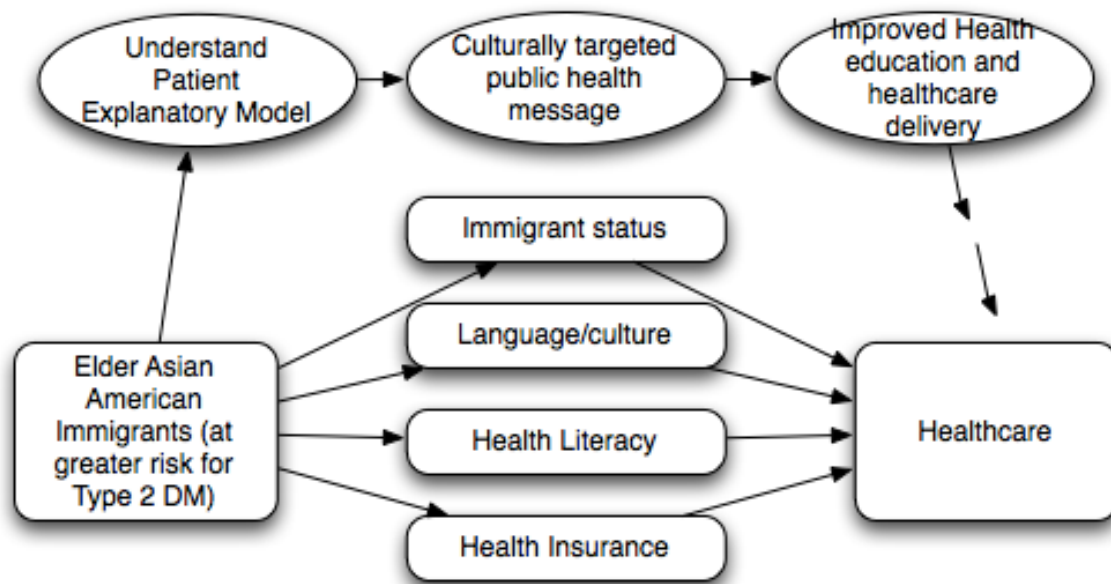
**Fig. 1 - Concept Map of methods to accessing health care for
Elder Asian-American immigrants (same image from Paper 1 section)**

Explanatory Models: Background Review

Kleinman's theory of explanatory models (EMs) proposes that individuals and groups can have vastly different notions of health and disease. EMs are "notions about an episode of sickness and its treatment that are employed by those engaged in the clinical process" (Kleinman 1980). Despite the fact that there is a move towards educating physicians in the biopsychosocial model which recognizes physical, behavioral and psychological aspects of illness, physician's explanatory models of illness are still largely biomedical in that they emphasize the biological and physical aspects of disease etiology. However, patients or individuals who are experiencing illness may have different explanatory models.

Elder Asian-American immigrants tend to have different explanatory models of health and disease brought over from their homelands, and these EMs may conflict with American ideas of health and disease (Han et al 2007). It is important to understand these EMs and find a bridge for elder Asian-American immigrant patients and health care providers in order to provide appropriate medical intervention and prevention. Patient education and cooperation in behavioral modification is key to prevention and management of diabetes.

Why Chinese-American Immigrants?

Asian Americans are distinguished from other racial groups by several characteristics: according to the 2010 U.S. Census, "Asian" refers to a person

having origins in any of the original peoples of the Far East, Southeast Asia, or Indian subcontinent, including, for example, Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam (US Census Bureau, 2010). Asian Americans had the highest proportion of foreign-born among all racial groups (approximately 59.9%), which is far higher than the proportion of foreign-born citizens (12.5%) to the overall general U.S. population (U.S. Census Bureau, 2010). Asian Americans are the second largest minority group in California, and make up one in seven Californians. Thus the health of Asian Americans in California matters a great deal.

Though there is a paucity of research done on Asian American health, there are fewer studies on the health of the Chinese American immigrants in the U.S., and even rarer to find studies focusing on the elders within this population. In addition, there are not many studies or papers discussing the interventions that address the health needs of this immigrant community. In light of the growing focus on patient-centered care and cultural competency in the medical arena, this thesis' research project seeks to examine and describe elder Chinese American immigrants' conceptual models of health and disease as a first step towards designing a health promotion program targeted to the elder Chinese American community in the US.

II. METHODOLOGY
Research Setting
This was a qualitative study that used semi-structured interviews, implementing them in three focus groups. Sixteen participants (5,5,6) were recruited from a community center located near Kaiser Oakland, which is located in the East side of Oakland. Individuals were approached by staff or a friend, and asked if they would be willing to participate in a 2-hour long focus group about health, disease, and diabetes in the elder Chinese American community.

Participants (recruitment)
For the sake of focusing in on a specific population sample, this study was limited to elder adults (age 60 or more) who self-identified as ethnically Chinese and who spoke Cantonese Chinese. These inclusion criteria for the study were established using the principles given by Hulley et al, 2007. In order to represent the population of interest we established inclusion criteria based on language ability and self-identification. Although Mandarin Chinese is the national language of China, Cantonese Chinese is a widely spoken dialect in China and is also widely spoken by many who immigrate from Mainland China and other regions of the Chinese diaspora such as Taiwan, Hong Kong, Vietnam, or Singapore.

Sample
The sampling approach was purposive to illustrate this specific elder immigrant community and was not meant to represent all Chinese immigrant patients in

Oakland (Becker 1998). Snowball sampling was also utilized by the community organizer for participant recruitment. Overall, three focus groups were conducted, with a total of 16 elder Chinese American immigrants (see demographics in results section). All groups were conducted in Cantonese and took place in Oakland Chinatown.

Use of Explanatory Models

As explained in the introduction and in my Paper 1 and in the background review above, EMs are the notions about an episode of sickness and their treatments that are employed by all those engaged in the clinical process. The interaction between the EMs of patients and practitioners is a central component of health care (Kleinman 1980). The types of EM held by patients influence receptivity to health promotion messages and health behaviors (Tirodkar 2010). By understanding a patient's EM, health care professionals (who also have their own EM) can better evaluate and develop treatment plans that patients are more likely to follow. Studies have shown that EMs play a large role in the type of healer a patient will visit and course of treatment to which a patient will adhere (Tirodkar 2010). EMs can play a crucial role in enhancing access to health care, while also improving cultural competency in the medical field. This knowledge can also be used in developing educational tools in prevention and management of diseases.

Analysis of the three focus groups transcripts in this project was accomplished in a similar style to that done in Tirodkar's research on common EMs found within the immigrant South Asian community. In that research study, the research group coded each response into different realms of behavior such as effects on health related to nutrition or stress. In addition to this analysis style, this analysis will also compare the differences between the participants to help explain some of their distinct EMs.

The Focus Group

The goal of this pilot study is to understand the similarities and differences in explanatory models of health and disease among elder Chinese immigrants and to understand their perceptions of Type 2 diabetes. By asking similar questions to each of the participant in a focus group setting, we can easily find parallel concepts of health among the group members, and they can come to a consensus or disagree with each other.

The focus group interview guides included semi-structured interview questions and centered around the issues of interest to this pilot study: the focus group participants were first asked about concepts of health and disease in general, and then were asked more specifically about concepts of etiology and prevention of type 2 diabetes. The questions were open ended so that the interviewer could probe more on particular concepts of interest to the study. Interviews lasted

between 2-2.5 hours and were conducted in Cantonese Chinese by the student project coordinator with a translator assistant (both fluent in Cantonese). These focus group interviews were later transcribed and translated into English by the student investigator and a separate paid translator and transcriber.

The interview guide was first created and piloted with elder Chinese immigrants recruited via snowball sampling from Richmond, CA and Oakland, CA in English by the student investigator. Following revisions and further piloting, the project coordinator then translated the interview guide into Chinese. The translation was contextual rather than literal, meaning that questions were translated to convey the best meaning in colloquial spoken Cantonese Chinese.

During the focus groups, the interviewer first asked the participants to fill out a mini-survey with their age, country of origin and preferred language for the interview to determine eligibility for participation in the study. Other demographic questions, including education, occupation, and immigration status were also included in this survey.

Several prompts were used to elicit concepts of health and disease. The following prompts were posed as open-ended questions and followed up with prompts for clarification at the discretion of the interviewer.

Interview Questions:

1. Are you healthy? What is the reason behind this thought of yours?
2. What does "health" mean to you?
3. What things do you do to take care of your health?
4. What does a healthy person look like?
5. When you are not feeling well what is the first thing you do?
6. What does it mean to you to be sick?
7. What does a sick person look like?
8. What causes people to be sick?
9. How do you prevent getting sick?
10. What is diabetes?
11. What does a diabetic person look like?
12. What causes diabetes?
13. How do you prevent from getting diabetes?

Procedures
The procedures for this study included: (1) reviewing prior research on explanatory model or health perceptions done with underserved communities and reviewing past research in Asian-American health; (2) conducting 10 individual

pilot semi-structured interviews among Chinese immigrants who were also recruited by snowball sampling through a senior center located in Richmond, CA. These individual interviews were conducted in order to develop the pre-focus group survey and focus group discussion guide in English; (3) translating the focus group survey and discussion guide from English into traditional Chinese; (4) coordinating with community organizer to assist with recruitment for the focus groups; (5) using purposive and snowball sampling to recruit Cantonese-speaking participants for focus groups based on age, immigration status, ethnicity, and language; (6) preparing focus group implementation materials and tools; (7) translating/transcribing focus group interviews; (8) analyzing focus group notes, surveys, and transcriptions; (9) drafting and completing report/thesis.

Data Analysis
Content analysis was conducted using the constant comparative approach with the focus group interview data

III. RESULTS
The intention of utilizing focus groups or group-style interviews was to assess whether there were any similarities or differences among the participants' views of health and disease. In other words, I am looking to understand the Explanatory Model (EM) of Health from each participant's perspective. In the first section I have provided a table describing the demographics of the participants (see Table 1).

The discussion section will consist of the differences found among the focus group participants. Their differences are broken up into three sections: Regional, Educational, and Acculturation/Age differences. The discussion section will then describe the commonalities found among the focus group participants. This section is broken up into four sections: Nutrition, Exercise, Mental Health, and Balance. Limitations of the study will be discussed. The conclusion will summarize the key findings in the research and suggest future directions for this research.

Descriptive Demographics
Status by Age and Sex
In summary, the three focus groups consisted of 16 participants overall, N = 16; 69% Women (11) 31% Men (5), with an age range between 60 – 81 years. Focus Group #1 (FG1) there were 5 participants (2 women, 3 men); In FG2 there were also 5 participants (4 women, 1 man); and in FG3 there were 6 participants (4 women, 2 men) (see Table 1).

| Table 1	Age	Gender	Years here?	Retired?
Focus Group #1	66	female	14	Yes
	66	male	12	yes
	60	male	28	yes
	61	female	30	no
	68	male	14	Yes
Focus Group #2	78	female	30	yes
	66	Female	29	yes
	81	female	29	yes
	78	male	25	yes
	79	female	25	yes
Focus Group #3	80	male	20	yes
	75	female	20	yes
	60	female	27	no
	70	female	29	yes

Location of Immigration

9 participants emigrated from Mainland China, 7 from Guangzhou and 2 from Beijing. 1 participant emigrated from Taipei. Taiwan and 6 participants emigrated from Saigon, Vietnam (Fig 2).

Fig 2 – Map of location of cities from which each participant immigrated.

Status by Education Level

Education standards are similar to a variant of the American education system. There are three years of junior high education/middle school education (*cu zhong*) and three years of high school (*gao zhong*). 63% of the focus group participants had at most completed junior high education (n=10), 6% had completed high school (n=1), 25% had completed some higher education like college or post high school vocational school (n=4), and 6% had completed a college degree (n=1).

Figure 3 -Status by Education Level

- Junior High
- High school
- Some college
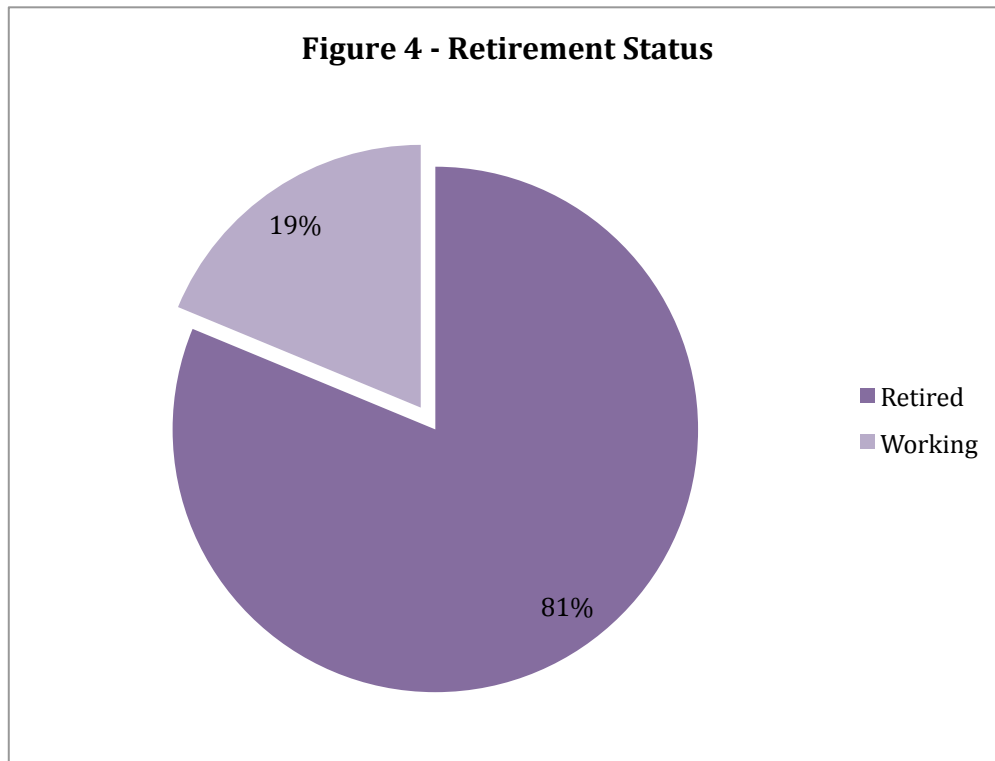- College grad

6%
25%
6%
63%
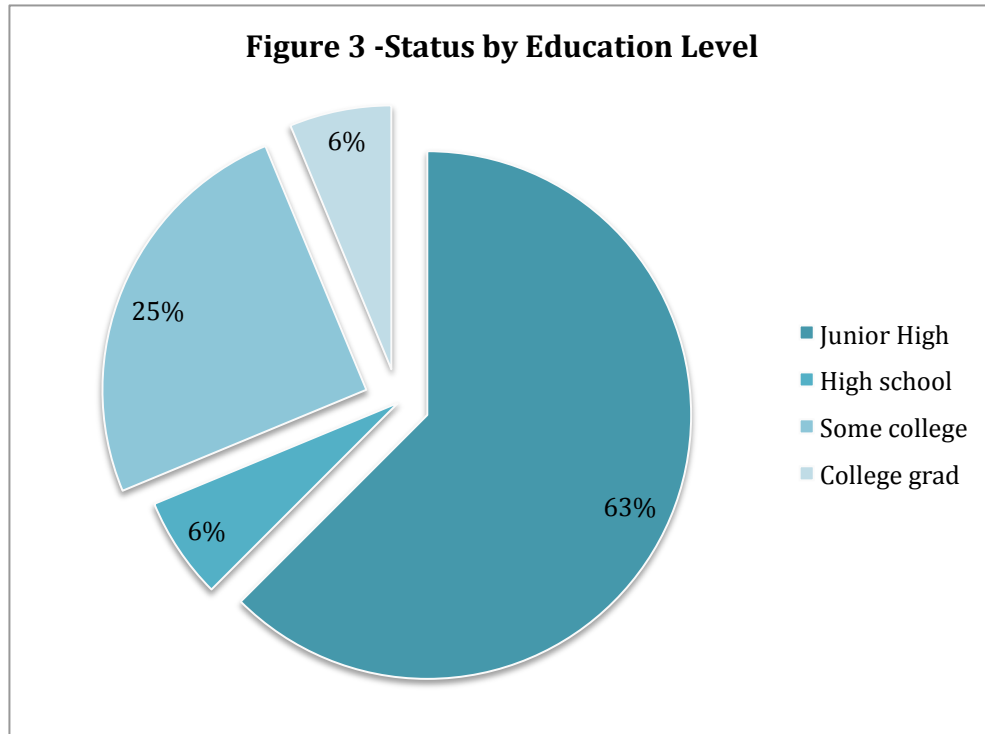
Immigration Status

Years since immigration from foreign country ranged from 12-30 years (table 1).

Retirement Status

Of the participants 81% are retired (n=13) and 19% are working (n=3) (table 2 and figure 4).

Figure 4 - Retirement Status

19%

81%

■ Retired
■ Working

Key Themes from the Focus Group Findings:

This section presents the findings for the key thematic areas across the focus groups and for each of the three focus groups. The focus group guide questions are separated into thematic areas related to A) Perceptions of Health, B) Perceptions of Illness, C) Taking Care of Health, and D) Perceptions of Diabetes & Preventing diabetes.

A) Perceptions of Health
1. *Are you healthy? What is the reason behind this thought of yours?*
2. *What does "health" mean to you?*
3. *What does a healthy person look like?*

Based on the focus group discussions, the perception of health can be separated into two categories 1) The Definition of Health and 2) Reasons for Being Healthy. Participants defined health as the lack of illnesses that cause pain, a body's resiliency to deal with changes to environment, mobility and good energy, appearance that show good *hei* (energy 氣), blood flow and youth. Many reasons for the belief of being healthy include visiting the doctor regularly, exercising regularly, and eating a healthy diet.

1) The Definition of Health
Key themes within this category are that health is defined as lack of illnesses that cause pain and reduce mobility, as having good *hei* (energy 氣), and is also defined as the body's resiliency to deal with changes to environment. Health can also be defined in terms of appearance, such as good color and blood flow.

Lack of Illnesses that cause pain & mobility and having good energy.
A majority of the participants within the focus groups reported that health is defined by the absence of both acute and chronic diseases that can cause pain. When a person does not have pain (caused by either an acute or chronic illness), they are mobile and can make decisions on their own and move on their own). This theme is also connected with independent mobility and the feeling of good energy (some participants used the word good *hei* (energy 氣) and some participants used the word *jingsun (*alertness 精神) which can be used synonymously to mean good energy with an aspect of alertness that comes with health).

> " "Healthy" is someone who has no illness, specifically no pain that comes from disease. Someone who is mobile [able to walk and run]. And if there is pretty much nothing wrong with their health, for example they don't get colds or flus very easily, you know... someone who does not have any underlying illness. So from my perspective, that's what a healthy person would look like." (Male participant, 66 years old)

> "I think my body [and health] are pretty normal. I am still mobile, I can walk up and down stairs, and I am able to do many things on my own. My vital energy (Hei 气)is pretty good, I have my doctor paying attention to my cholesterol and sugar level, so I can relax. " (Male participant, 70 years old)

The body's resiliency to deal with changes to environment
Many participants reported that health is related to the body's resilience or adaptability to deal with changes in the environment. This theme can be broken down into two sub themes. A number of the participants referred to the body's ability to fend off germs such as viruses or bacteria, relating this adaptability to the body's quick and efficient immune response to germs. Some of the participants related this resiliency to the body's adaptability to changes in the weather or changes in a person's diet. For example, a few participants referred to their move from China to the San Francisco Bay Area and expressed that the difference in weather patterns between the two locations may be enough to "off-balance" a person. However, if one is healthy, changes in weather will not cause illness.

"If you're healthy, the environment shouldn't affect your health. So for example if it's 36 or 37 C so suddenly, a healthy person wouldn't be affected by such a change in environment. S/he would be fine. A healthy person can deal with the changes in weather or environment." (Female participant, 60 years old)

"When I lived in Guangzhou, there was a sudden rain storm. Everyone had umbrellas, but I just walked out into the rain without one, and I just had rain fall on my head and walked home. I really looked like a wet dog. One would have expected that I could've gotten sick, but a healthy person can be chilled or overheated and not have any ill effects." (Male participant, 80 years old).

Appearance that shows good *hei* (energy 氣), blood flow, and youth.
A number of the participants responded that health can be defined in terms of appearance. Examples that some of the participants gave are as follows: Health is determined by appropriate blood flow to the cheeks. Thus health can be defined by the color or redness in the cheeks as well as the appropriate skin tone. The lack of ruddiness or yellowness and paleness in the skin is also a sign of health. A few participant used the phrase *meen hong hong (*red red cheeks 面紅 紅) to describe a "youthful and healthy face." Health is also determined by the *jing sun* (alertness 精神) that can be visually ascertained in the face and seen in a person's gait. All of these represent healthy *hei* (energy 氣). Some of the participants also mentioned weight as an important indicator of health (healthy weight is found in someone who is neither too skinny nor too fat).

"Sometimes you can just tell if someone is healthy by their face. Their face is just red and youthful…. Not too red, but just shows good energy flow and good blood flow. That's how you can tell if someone is healthy." (Female participant, 79 years old)

2) Reasons for Being Healthy
Key themes for the reasons for knowing they are healthy are that the participant visits a doctor regularly and the doctor has told them that they are healthy. Other reasons are that they regularly exercise and eat a healthy diet.

Regular Doctor Visits
Most participants described themselves as knowing they are healthy because they visit a doctor regularly and the doctor has told them that they are relatively healthy. A majority of the focus group participants believe that if they go to a doctor regularly, s/he will check up on their health status through labs and other diagnostic exams.

"I don't know. I feel healthy. My doctor has told me that I am healthy. All my health examinations have been normal. I am most likely healthy because my doctor tells me my health is as should be expected for someone my age. You know, my bones and my blood seem to come up normal." (Female participants, 61 years old)

Regular Exercise Routine

Many participants also believe that they are healthy due to their regular exercise routine. Exercise for these participants include walking or hiking regularly, or doing outdoor chores. Some participants gave examples of social dancing like ballroom dancing or salsa, other participants gave examples of gardening or light hiking with friends and family.

" The number one reason why I think I'm healthy is one thing, it is exercise. For me exercise is good because it helps my physical body, but it also helps me to relax. I know how to relax and reduce emotional stress (fang song ngo ge sum qing 放鬆我的心情). Actually, number one is to relax. Number two is to maintain a good exercise routine. Nothing too strenuous, I'm older now, but I make sure to walk a lot and maybe go swimming or do body stretches with my close friends. (Male participant, 68 years old)

Eating a Healthy/Balanced Diet

A number of the participants also attribute their health to eating a healthy/ balanced diet. A healthy/balanced diet was considered as many things. A few participants discussed eating many vegetables in order to get enough vitamins and minerals. Most of the participants explained that a healthy/balanced diet included drinking soups that helped "balance the body." These soups known as *tang (*broth-soup 湯)*. The focus group participants explained that these *tang (*broth-soup 湯) are specifically made as a medicinal food which is taken either before or after meals. They are made with many different vegetables and some folk medicines such as herbal barks and roots. They are often cooked with meats such as pork or chicken with bone in.

"I don't eat fried or oily foods, and if I do I make sure to make broth soups to boil soups to help. I usually boil soups with foods that help clear heat, you know, carrots, green vegetables, sometime bitter melon. I love all types of broth soups…. These soups are used to *siu jai* ("break down food stagnation" 曉齋), that's when you have trouble with digesting foods"

A few participants did not feel completely healthy, and described feeling "mostly healthy" when they are in control of their chronic condition such as hypertension or hypothyroidism. These participants attributed maintenance of their health to

continued vigilance of controlling their thyroid hormones and blood pressure, as well as regular visits to their primary care physicians.

B) Perception of Illness
1. *What does it mean to you to be sick?*
2. *What does a sick person look like?*
3. *What causes people to be sick?*

According to the participants' responses, this Thematic Area can also be broken down into two categories 1) Definition of Illness 2) Reasons for Being Ill.

1) Definition of Illness
Key themes within this category are that illness is defined as lacking the ability to deal with changing environment and *m'ping hang (*imbalance 不平行) in the body, Tired and No *hei* (energy 氣), Appearance that Shows No Color and General Paleness, and a section on other Definitions of Illness that came out in the analysis.

Lacking the ability to deal with changing environment & m'ping hang (imbalance 不平行 in the body)
Many of the participants described illness as lacking the ability to deal with changing weather or deal with overindulgent food (such as too oily or fried). When asked to describe these types of people who lack this ability, examples of "often catching colds and flus" and "digestion problems" came up.

Some participants describe people who have decreased ability or resiliency as most likely *m'ping hang (*imbalance 不平行) due to changes in the environment. An example of how the environment can cause imbalance is sudden change in weather, such as changes in temperature or changes in the season.

> "The environment is temperate [in the Bay Area]. For example, if you were back in Guangzhou, if you lived in that climate for a long time you would have to spend time to balance out your body. Unlike here, the nighttime temperature and the daytime temperature aren't very different around 30C. Very hot. So at night, one would experience sweat at night. You would wake up with sweat. You would just constantly burn up your energy.
>
> Here, at least the temperature is cool at night. So the evening temperatures help balance the body. This is also very important to health, the environmental effects on health.
>
> Another thing, the heat and the environment make things like viruses and bacteria prevalent. So I believe there are a lot more illnesses like colds

and flus in China then here [in America]. Here we see more things like chronic degenerative diseases." (Male participant, 80 years old).

Another example the participants gave for changes in the environment is change in diet. An ill person is unable to deal with the changes in the diet or deal with particularly foods that are *lan yi siu fa* ("hard to digest" foods -難以消化). A few participants gave examples of how their change in diet from their home country to America can affect someone's health. Many participants also gave examples of types of foods that can cause imbalance such as foods that are too oily, too spicy, or too much raw food. According to a few participants, the types of foods that is inappropriate for the individual is dependent on the individual or dependent on the weather.

> "Chinese people have this idea of "*yeet hay*" ("Hot qi" 熱氣). "Yeet hay" is when you have heat. Heat is caused by the foods you eat or the environment you are in. Fried foods and foods like shrimp and crabs can cause [illness] especially if your body cannot handle that type of food. It is best to avoid "yeet hay" foods when you are weak" (Female participant, 67 years old)"

> "Someone who is sick, if they miss their meal times by 30 minutes or if they do something unusual like eat foods that they are not used to eating, their stomach will feel very uncomfortable. This is what it means to have trouble digesting." (Male participant, 71 years old).

Tired and No hei (Energy 氣) (generalized lack of energy*)*
Most participants also defined illness as being a state of tiredness or a state of no *hei* (Energy 氣). When asked to define tiredness these participants emphasized that it is an inordinate amount of tiredness, not just typical tiredness at the end of the day—"*ho gwui*" ("very tired" 好累). Another example is feeling easily winded when doing something like exercising or just walking. When asked about what it means for them to be sick, a couple of participants explained that it means to lack energy and lack mobility.

> "Once someone gets sick, they feel very tired all the time. They sleep all the time, and you can see in their eyes that they have no energy. They can't do the activities they would normally do. Sleep can help some diseases like colds and infections. There are also people who have chronic illnesses. My aunt died of cancer. Before we knew about it, she would constantly complain about being so tired. Sometimes, being tired is a symptom of a serious illness." （Female participant, 60 years old)

> "When I am sick, all I want to do is sleep. That is the first thing I do when I

feel I have a cold—(*seung foong,* literally: "to be hit by wind" 傷風). I can't do much when I am sick, sometimes I have trouble just walking around my house."(Female participant , 75 years old).

Appearances that show no color and paleness

Many participants described an ill person based on their appearance. Some described an ill person as having "no color or pale in the skin and face" -- *meen chang chang* (literal translation: a pale green face: 面青青) 。Some also described an ill person as either too fat or too thin. There is a perception of an ideal appearance. Illness is defined by a middle ground in appearance; if a person has too much redness or not enough redness in the face and cheeks, or is too fat or too thin, the person is perceived as ill. These participants agreed that one can generally pick out a very ill person based on their appearance.

> "People who are sick are very easy to see in their face and in their actions. Usually their face is pale and they talk very quietly. You can tell they are not healthy because they lack *jingsun* (alertness 精神)。。。 you can see this in there eyes and how they react"
> (Female participant, 66 years old)

Other Perceptions of Illness

A few participants defined illness as being physically weak, linking it back to mobility as a determinant of health. They gave examples of being unable to walk unassisted or unable to walk up stairs. A couple of participants also discussed that ill people are seen as not independent and unable to make decisions on their own.

> "When my friend was diagnosed with colon cancer, she was very weak. Maybe it was because of the chemotherapy, but she had to have assistance with walking. The body becomes weak when [you] are sick"
> (Female participant, 61 years old).

> "When you are sick it becomes difficult to do things on your own. You have to rely on other people." (Male participant, 66 years old)

2) Reasons for Being Ill

Key themes found in this category are that illness can be caused by being in an environment that can predispose one to illness, poor diet can cause illness, poor health behavior habits, and other examples, such as not following doctor's advice or having a genetic predisposition to illnesses.

Poor diet

All participants attributed many illnesses to diet, either not eating the right type of foods, or eating the wrong types of foods for the individual. A number of the participants gave examples such as foods that are *tai fei (*too much fat 太肥*)* and foods that are *tai teem (*too sweet太甜) are generally acknowledged as the wrong types of foods. Many participants reiterated that the wrong foods are also dependent on the individual and the environment. The concept of heat and cold was brought up again when discussing the right and wrong types of foods to eat. The right types of foods are said to balance the body. So for example if it's hot outside, one should eat foods that cool the body, such as foods with a lot of water content, watermelon, cucumber, or fresh green vegetables.

> *"*Generally, bad foods are spicy hot foods or foods with too much oil like fried foods. Eating too much of those foods can make you sick." (Female participant, 70 years old)

> "The foods we are eating today (in society), I'm not brave enough to eat. It's too oily. You know, the foods you find at restaurants. If I eat it, I would for sure be very sick now." (Male participant, 60 years old)

> "I know I'm not doing my best when it comes to the foods I eat. I avoid eating all the bad foods, you know the *yeet hay* (hot energy 熱氣) foods (translation: foods that cause hot energy) that are fried and too oily, but I don't eat my vegetables like spinach and other leafy vegetables. Sometimes you get busy, and forget to eat that type of food. When I get sick, it's probably because I haven't been paying attention to my eating habits." (Female participant, 75 years old)

Poor health behavior habits
The focus group participants listed a variety of behaviors as the causes of illnesses. The main themes in this category are themes related to sleep, exercise, and behaviors such as smoking and drinking.

Many participants faulted not getting enough sleep as a behavior that can lead to illness. Some participants explained further that poor sleep quality can also lead to illnesses. Examples of poor sleep quality include inability to stay asleep all night or waking easily. One respondent also reasoned that a person can also get too much sleep, and too much sleep can also cause illness.

> "When I don't get enough sleep, I get sick very easily. I'll catch colds and I notice I'll get more sore throats and coughs." (female participant, 60 years old)

"Sometimes when I get upset about something emotional, I stay up all night thinking about it. After awhile of not sleeping, or having poor sleep I feel very sick." (female participant, 66 years old)

Another behavior that was discussed is exercise. A majority of the participants agreed that lack of exercise can bring about illness.

"Now that my wife and I are retired, we have to pay particular attention to not being lazy and pay attention to exercising regularly and also be careful of our food and drink intake. I feel like if I don't pay attention to it, my belly will get larger and my cholesterol level will go up." (male participant, 68 years old)

Other examples of poor health behavior habits a few participants mentioned are smoking and drinking alcohol and also being too lazy, or unemployed.

"I feel like whether your health is good or bad is most related to exercise. According to my experience, if a person is really **lan do** (**lazy** 懶惰), this will really affect your health. If you are lazy, it will affect both your mind and your activities. If you don't move or have activities, it can affect your studying capabilities and abilities to function well at work. It will even affect your relationships with friends and family." (Male participant, 60 years old)

Being in an environment that can predispose you to illness
Some participants gave reasons found within the environment that can cause illness. One example expressed in two different focus groups is that being around sick people can cause illness. This is not always the case, but it happens when a general pathogen (either bacteria or virus) *bang duk (virus* 病毒) is passed from person to person.

"We joined a gym to take Zumba, it's an exercise class [to help stay healthy and fit]. But you know what, Zumba classes have a lot of people in each class, and it's not very healthy with so many people in a small room…. I feel it's not healthy because everyone passes on there are *bang duk* (bacteria/ viruses 病毒) in a small room. Everyone is sweating and it isn't very clean. We try to do other exercises like ballroom dancing that isn't so crowded." (Female participant, 66 years old)

Another example of how one's environment can cause illness is when one is *m'hoi sum (unhappy* 不高興). According to a few of the participants, unhappiness can be due to depression caused by perception of oneself or by irritation from other people. Also unhappiness can be caused by strained familial relationships or strained relationships with friends.

"Sometimes when you don't know how to let something go or relax (literally – "to release the heart" fang sum 放心), such as a fight with a family member, it will make you sick. It can affect your happiness. When you are unhappy, you get sick. You have trouble sleeping, you have trouble digesting foods, you become weak." (Female participant, 75 years old)

Others Causes of Illness

There were a few more reasons given by a couple of participants, such as illness can come about if you do not follow what the doctor instructs you to do or follow his/her nutritional advice or medication advice. A couple of participants also pointed out that illness can be caused by having a genetic predisposition for weaknesses that reduce one's ability for fending off illness or chronic diseases or better translated as "pre-heavenly [energy]" *seen teen* - 先天.

C) Taking care of health
1. *What things do you do to take care of your health?*
2. *When you are not feeling well what is the first thing you do?*
3. *How do you prevent getting sick?*

The focus group participants really enjoyed answering these questions and had a plethora of answers. The key themes in this section about how these elders take care of their health can be broken up into **diet**, **daily behaviors, and maintaining mental health.**

Maintaining a healthy diet

All participants responded that in order to take care of health and maintain health they try to eat a "well balanced" meal. What they considered a healthy "well balanced" meal was very similar to each other as explained in the above sections, such as eating vegetables, avoiding fats and sugars. But their reasons for eating a healthy diet were different. A majority of respondents spoke about eating meals in accordance with the individual's environment.

"When we lived in Guanzhou, the weather was humid and hot. That's why our family would boil soups or eat foods that would *qing yeet (cool* 情熱) and *hui sup* (take away "dampness" 祛濕")。But now that we are in California, we don't worry about heat as much. It is actually a lot colder and drier here. Now we just boil soups to help *bo* (nourish 補) the body."(Female participant, 75 years old).

Some participants reasoned that a healthy diet is a diet with leafy vegetables and other vitamin-packed foods. In these participants explanation, anything that has "vitamins" or is good quality is considered part of a healthy diet.

> "You need to pay attention to the foods you eat. For example, vegetables, make sure to eat fruits. Green vegetables. At dinner, we eat very little. We eat very bland foods, we eat vegetables, sometimes we eat a banana, sometimes we eat an apple. We eat ginko, and almonds, and many other health foods. We eat anything that is high in vitamins and is good for the body." (Female participant, 75 years old)

All three focus groups had discussions about making a type of broth/soup-- *bo tang (broth soup 煲湯)*. Not everyone practiced this type of soup making, but all participants were familiar with the practice.

> "My family often makes soups (*bo tang).* Any soup is fine, as long as you have soup. One example is a *qing tang (* "clearing soup" *清湯)。*[It has] carrots and green veggies. [It] helps decrease food stagnation, you know when you eat oily foods and helps your digestion… it helps clear your colon." (Male participant, 78 years old)

Maintaining Healthy Behaviors
All the participants gave examples of behaviors that were important to maintain in order to stay healthy. The behaviors fall into the categories of exercise, medication/vitamin regimen, sleep, and disease/infection prevention.

Overall, a majority of the participants emphasized the importance of getting regular exercise. Many types of exercises were suggested such as walking, taichi, yoga, ballroom or salsa dancing, swimming, and even some cardio classes like Zumba classes. Some participants discussed the importance of exercise for maintaining weight. Some participants reasoned that exercise was important for moving blood and building *hei* (energy 氣*).* One participant emphasized that exercise such as lifting weights was important to her to maintain her bone density.

> "I know I'm supposed to exercise more now that I am gaining weight, it's just difficult when you have other things to do. Right now I go to the YMCA and swim when I can. If I had a good habit of exercise everyday I would go hiking in the hills, and maybe swim more." (Female participant, 60 years old)

A few participants mentioned a regular habit of taking medications or daily vitamins to supplement a healthy diet.

"These days, the foods we eat aren't as nutritious as before. We have to supplement our diet with vitamins otherwise we may be lacking in important vitamins." (Female participant, 78 years old)

"In order to stay healthy, you ought to continue taking the medications your doctor gives to you. Sometimes people forget to take it, but if you take it regularly, your body will stay healthy." (Female participant, 70 YO)

Another behavior mentioned by a couple of participants is maintaining good sleeping habits.

"I always go to sleep before 10pm. I keep telling my grandchildren they will get sick if they stay on the computer too long. They should be in bed early and get rest." (Female participant, 75 years old)

Other behaviors mentioned included washing hands often, and avoiding sick people.

Maintaining Mental and Spiritual Health
Although the participants did not use the words mental health, they often discussed ways of staying relaxed and *hoy sum (happy* 開心). Some of the participants gave examples of exercise as a way to stay happy, or maintaining a good work ethic as a way to stay happy. A couple of participants gave examples of talking to friends and family and maintaining relationships as a good method of keeping happy and staying healthy.

" You can remember to often talk to your family and friends and maintain relationships. When you are lonely that can lead to illness, but when you have happy relationships, that can have a big help in staying healthy" (Female participant, 61 years old)."

A few participants discussed following moral teachings and maintaining ethical behaviors as a way to keep a happy attitude. One participant brought in the teachings of Buddha as a way to stay healthy.

"The Buddhist teachings tell me to live moderately, don't eat too much, don't spend too much, don't want too much. Treat people how I would want them to treat me. I find I am very comfortable and happy following these teachings with very little pressures" (Male participant, 60 years old).

D) Perception of Diabetes & Preventing Diabetes
1. *What is diabetes?*

2. *What does a diabetic person look like?*
3. *What causes diabetes?*
4. *How do you prevent yourself from getting diabetes?*

Perception of Diabetes

This section is broken up into two sections: 1) Definition of Diabetes and 2) Causes of Diabetes. Key Themes from this Thematic Area are that diabetes is due to eating too much sugar in one's diet, or due to having too much cholesterol in the blood; diabetes may also be due to a genetic component; and that a person with diabetes may be viewed as overweight and has a habit of little to no exercise.

1) Definition of Diabetes - Most of the participants understood that diabetes -- known as *tang niu bang* 糖尿病 literally meaning "Sugary urine disease" – is a disease related to too much sugar within the body. A couple of participants believed it to be too much cholesterol in the body because they related the disease to being caused by being overweight. Although most participants responded that diabetes is related to weight and is tangentially related to the sugar content within the body, some participants pondered the difficulty of really knowing who has diabetes because this disease is not always easily determined from the appearance.

> "You know, I recently went to get my blood checked and my doctors said I had a high number of sugar in my blood. It wasn't too high, but he told me cut down on eating rice, sugary foods, etc etc. I was shocked. I don't eat that much sugar. My whole life I don't like eating sweet things. I don't feel like I'm overweight. Next time I go to my doctor's clinic I want to check to make sure that my sugar level was a mistake." (Female participant, 75 years old).

2) Causes of Diabetes - Similar to the section Reasons for being Ill, most of the participants discussed that a diabetic person is generally overweight and does not exercise. Many of the participants agreed that a diabetic person craves sugar and sweet things and will eat sugary foods often. A few participants explained that diabetes may be related to family genes, and not just related to behavior and diet.

> "Usually, I think a person with diabetes is overweight and has a problem with diet. It is most likely that a majority of the people who have diabetes have this problem. There are also some people who cannot do anything to help themselves. No matter how much they try, they still have diabetes. Those people probably were born with this disease. Those people just have to try their best and stay healthy in other ways, and prevent getting even more sick." (Female participant, 66 years old).

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Prevention of Diabetes

A majority of the participants agreed that it is possible to prevent getting diabetes. In order to prevent diabetes, the majority of participants emphasized the importance of getting regular check-ups with a doctor. A few participants added that regular check-ups are important because it is hard to know or feel when one has crossed the barrier of "having diabetes". Most of the participants described that the best individual behavior one can affect in order to prevent diabetes is to reduce sugar intake, eat more vegetables, increase exercise, and improve mood.

> "It is hard to say what really causes diabetes. All I can do is make sure I don't choose sugar-filled snacks and foods, but instead choose vegetables and fruits to eat. You know, eat that orange instead of that piece of candy." (Male participant, 71 years old).

> "Sometimes I feel outside of going regularly to see your doctor, and having him take your blood to check all your numbers, the only thing left for me to do to stay healthy is to go outside, get some sunlight while taking a walk. This is not only good for my physical body, but also good for my heart (mind). Every day I can worry about this disease or that disease, but I think the best thing for prevention is to worry less." (Female participant, 75 years old)

IV. DISCUSSION

In this study, the Explanatory Models (EMs) for health and disease for the focus participants were largely conceptualized within a biological and psychosocial framework, with the participants emphasizing that good diet, regular exercise, and good health behavior habits are key to health and preventing illness. In addition to individual behaviors, the environment that an individual resides within is also important to understanding the relationship between the Thematic Areas and key themes of Perception of Health, Reasons for being Ill, Perceptions of Illness, and Taking care of Health. This section is broken up into two main sections: A) Relationship of the Thematic Areas; and B) Commonalities and Differences among the Focus Groups Participants' EMs.

A) Relationship of the Thematic Areas

The relationship of the Thematic Areas and key themes described above are illustrated in the graphic below (Fig 5). Starting with Perception of Health illustrated in the top box in red, the key themes found within both categories of Definition of Health and Reasons for being Healthy are that one is perceived as being healthy if one has good *hei* (energy 氣), while also being very resilient to change in the environment and changes in diet.

An individual's state of health changes to illness after going through events described in the section "Reasons for Being Ill," illustrated in the first green box. There are two types of reasons or causes for being ill. Illness can be caused by (1) Individual behaviors or (2) Environment/Genes or a combination of both. Individual behaviors include eating a poor diet as described in the results section, having little to no exercise, or not having enough sleep/poor quality of sleep. Causes of Illness due to Environmental/Genes include having a genetic predisposition, viral or bacterial exposure, changes in weather patterns, and having a social/economic dynamic that may cause stress on an individual. A combination of causes from these two categories can lead to illness, also represented by a green box in figure 5.
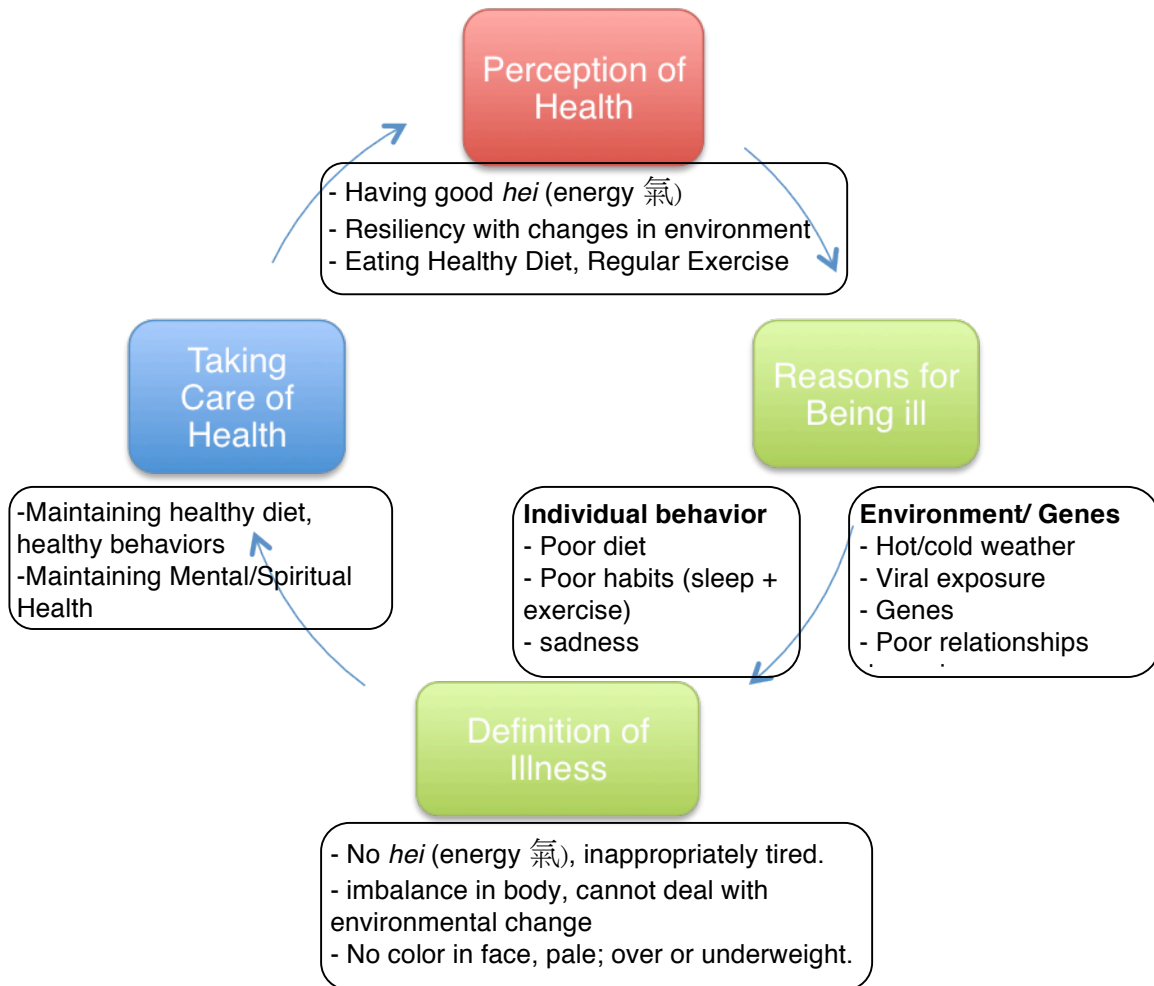

Figure 5 – Illustration of Relationship of Thematic Areas described from the elder Chinese American immigrants' Explanatory Model of Health and Disease from this focus group study.

The state of illness is described by the focus group participants as having no *hei* (energy 氣), and being inappropriately tired and having an imbalance in the body that makes the body unable to deal with changes in the environment, thus bringing about a greater degree of illness. In order to change from the state of illness to health, an individual can take steps to take care of one's health. Taking Care of Health is another Thematic Area shown in blue in figure 5.

By taking steps such as maintaining a healthy diet as described in the results section such as eating for the right environment and drinking *tang (* soups 湯) to help balance the body or by maintaining a regular exercise routine, an individual can go from being perceived as ill to being perceived as healthy.

As illustrated in figure 5, the Explanatory Models of Health and Disease can be viewed in a cyclical manner. The Perception of Health and Illness are connected by sets of behaviors or environmental exposures that can change an individual's state of health to a state of illness, or vice versa.

The last Thematic Area, Perception and Prevention of Diabetes, can be seen related to this cycle, illustrated in figure 6 (on the following page). Causes of Diabetes are similar to Reasons for being Ill in that they are both broken up into causes due to individual behaviors and causes due to environment/genes. The cause of diabetes leads into the state of diabetes. The focus group participants mainly perceive diabetes as a disease that is due to too much sugar in the body. The participants described a diabetic person as being overweight and under exercised. In order to prevent diabetes (or even treat someone who is diabetic or pre-diabetic), the participants believe that getting regular check-ups with a doctor is just as important as eating a healthy diet (in this case a diet with less sugar), and exercising regularly in order to maintain a healthy weight level (Figure 6).
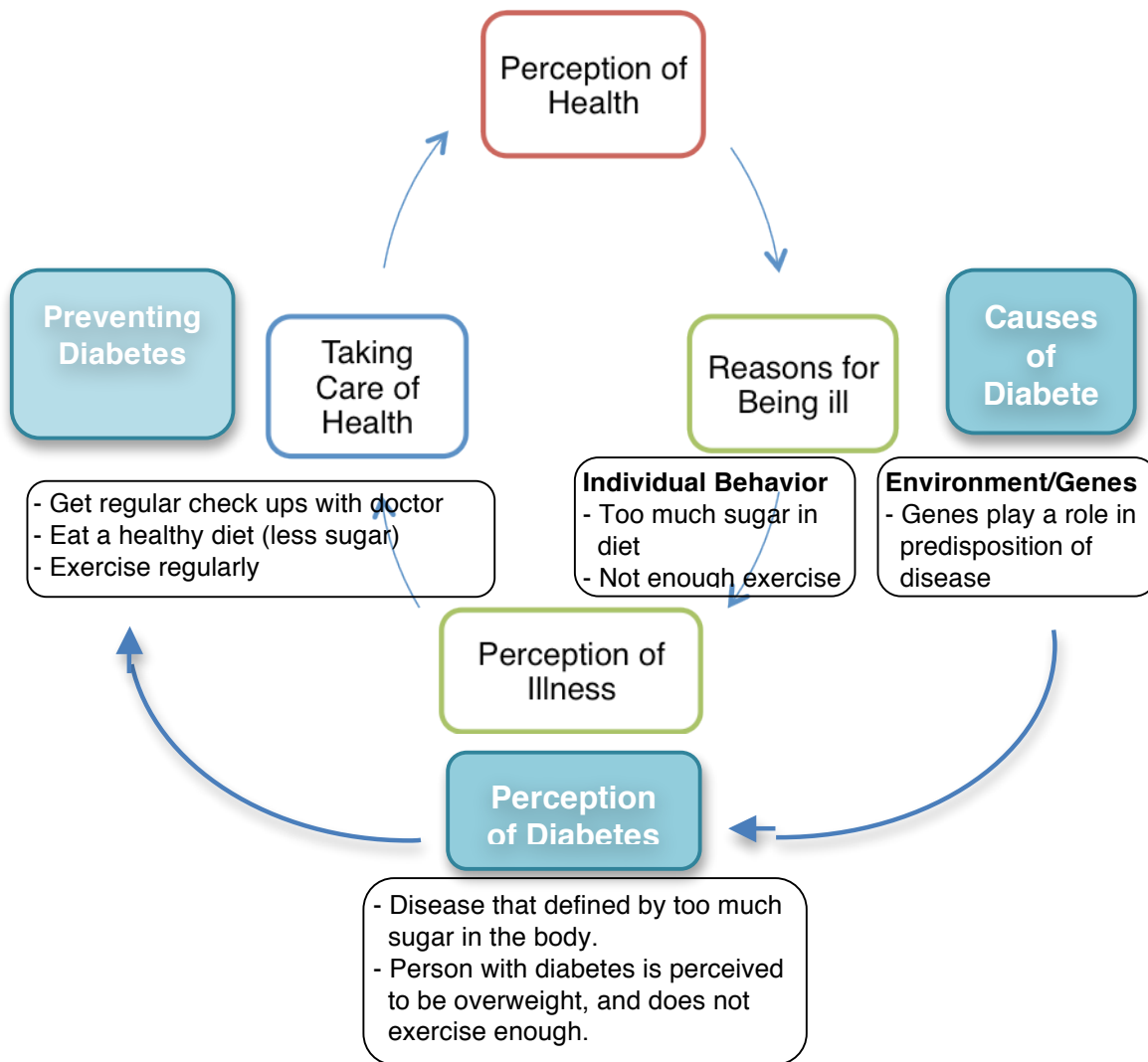
Figure 6 - Illustration of Perception and Prevention of Diabetes in relationship to the other Thematic Areas described from the elder Chinese American immigrants' Explanatory Model of Health and Disease from this focus group study.

B) Commonalities among the Focus Group Participants' EMs

In this group of elder Chinese American immigrants, we found many common cross cutting themes that largely placed health and illness within the contexts of individual behaviors (for example diet and exercise). The frequency of a healthy diet as part of the Thematic Areas of Perception of Health and Taking care of Health are not surprising given the importance of dietary principles in preventing and treating illnesses within cultural folk medicine and the traditional medical system of health from China.

The commonalities found among the participants of the three focus groups are separated into four different realms: nutrition, exercise, mental health, and balance. Each participant has mentioned the importance of these four aspects in maintaining health and avoiding illness.

Nutrition

A majority of the focus group participants mentioned the importance of eating vegetables in order to maintain health. Nutrition is very important to these participants. Their reasoning varied from eating vegetables in order to get the proper nutrients to maintaining "balance" within the body (discussed in section "**Balance**" below). The participants who emigrated from the southern regions of China as well as Vietnam mentioned that another way to get good nutrition is through savory broths – *tang* 湯 *soup*)-- which also include vegetables like carrots. One participant from northern China, Beijing, noted that southerners are in the habit of making soups and that she has taken on this habit as well. All seem to imply that nutrients should be ingested through whole foods and not supplements. One participant explicitly mentioned the importance of eating whole foods and avoiding eating processed foods or nutrient supplements because they are "unnatural."

      The focus group's idea of nutrition added another layer of complexity. The majority of them mentioned the significance of eating the right foods for their specific body needs. Instead of general blanket statements about the healthfulness of specific foods, one participant best expressed that a person may need different nutrition at different times:

> Interviewer: What do you consider "good" food and what do you consider "bad" food?
>
> Participant: It depends on how I'm feeling at the time. It could be the same food. Some days, "Oh this is exactly the food I'm craving, this is what my body needs today" and some days I think, "This is not what my body needs today." (Female participant, 81 years old)

When urged to give an example, she would not answer until given a specific time frame of when a certain food was appropriate to eat for healthfulness. Another participant also explained that she chooses different foods based on the weather and on her "internal temperature:"

> " [In order to eat foods appropriate for health, you choose foods] based on how you feel. Sometimes you can feel cold even if the weather is hot. So during those times you can still eat something like ginger to help balance the internal cold." (Female participant, 81 years old)

The focus group participants emphasized that the "right" foods to eat are dependent on the unique nature of each person's body and how it changes throughout the day, week, or year.

Nutrition was also important to a majority of the focus group participants in regards to food avoidances. They were very adamant about what types of food to avoid in order to maintain health. All of them even suggest that eating the wrong types of foods can lead to sickness. One participant described it in very clear language:

> "Of course, if you eat the wrong foods, that will make you sick. The foods you should avoid are the ones that make the imbalance even more severe. So if you were to eat cold foods like raw vegetables when you have cold inside. That will make you sick. That can cause you to have diarrhea." (Male participant, 68 years old)

The etiology for how eating inappropriate foods can lead to sickness differed slightly. A few focus group participants mentioned that eating too much greasy and oily food can lead to obesity, which makes a person more susceptible to a chronic disease like diabetes. However, some participants mixed both etiologies of the eastern idea of "imbalance" with the western idea of obesity leading to disease.

Exercise

Exercise plays a large role in health maintenance for all the focus group participants. Exercise can range from walking and meditation to doing yoga on a regular basis, taking daily walks, and taking time out of their day to do gym exercises. One participant best described the logic behind why she exercises in order to maintain health:

> "Sometimes I feel like, "Oh my whole body needs to just get moving" and I really want to get moving and sweat. So then I need to find a chance to jump on a treadmill. And there are days when one part of my shoulder is very sore, so I would do movements like stretching to focus on that part of

the body. Certain days if I feel like my knees are stiff or cold, I will focus my attention on that. I would do movements to reduce, you know, that pain or stiffness….(exercise) will prevent from further discomfort or any pain or any injury, which is very important to maintaining health." (Female participant, 61 years old)

Exercise is very important to maintaining health because it "moves" *hei* (energy 氣) and blood. The above participant was tangentially referring to that "movement" in the previous statement, but one participant specifically mentioned that exercise is to help move *hei* (energy 氣) and blood. If they are both moving, and not stagnant then there is no pain. And if there is no pain, there is no illness.

Mental Health – It is intriguing to note the prominence of "happiness" among these focus group participants in order to maintain health. Discussing mental health status among Asian-American immigrants is known to be a taboo topic (Kim & Keefe, 2006), however the participants raised the issue that one cannot be healthy if one is not happy. They stressed the great influence of relationships with other people to one's own health and happiness. One participant spent a great deal of time during the focus group discussing how meditation helped her improve her family and friend relationships, which reduced her stress and made her happy. She attributed her current state of good health to regular meditation and reduction of stress. Another participant asserted that mental health and physical health are interconnected.

Balance – A majority of the focus group participants discussed the idea of "balance" which is also closely related to the idea of moderation in behaviors. Balance was reflected not only in nutrition, but also in *hei* 氣 (energy) and blood levels. Across all focus groups, the majority of participants spoke a great deal about moving *hei* 氣 (energy) and blood in order to promote health. Without balance, one is unable to maintain health and will get sick. Both also mentioned the importance of an even, or balanced emotional state. The participants also referred to a balance of temperature within the body (the body's hot and cold).

C) Differences among the Focus Group Participants' EMs
This section goes into differences in EMs found among some participants within some of the four described Thematic Areas.

Different Perception of Illness - There are slight differences in Perception of illness. Some participants (participants of an older generation) spoke noticeably more about Chinese habits and traditions than the other participants (mostly non-retired participants).

P: "Shanghuo" (heat) is described as, in Traditional Chinese Medicine, as a type of food that affects your body internally. It causes heat to build up internally in your body, moreover this heat is so great that it will show up physically. I don't mean the type of heat in a fever. It's not the fever type of heat. It's the type of heat that builds up in your organs. When heat builds up in your organs it will affect your body, like.. a sore on your tongue or painful tongue or a sore throat." (Female participant, 78 years old)

This one participant seemed unsure about most of her answers because she constantly apologized for not being well educated, but when she talked about Chinese tradition, her voice changed a great deal and she seemed more confident in her answers. The older participants also lectured on Chinese traditions by teaching the phrase "Bu tong ze tong, tong ze bu tong" (literally translates to: Stasis leads to pain, but when there is no stasis there is no pain.) She brought up this phrase in order to explain why Taichi movements can help improve health.

It is possible that elders are more likely to retain information on Chinese traditions because these traditions were more prevalent in their youth and younger adult life. These days, many of these phrases are not often used. Their knowledge is a reflection of the era in which they were raised.

Another possibility for this difference could be due to difference in education. The majority of the participants in these interviews have at most a junior high level of education (n= 10). The range in education among the focus group participants may not be representative of the actual range in education among elder immigrants from China.

The focus group participants have starkly different health literacy levels, which may be related to their education level. Health Literacy is defined as the ability to understand health information and to use that information to make good decisions about one's health and medical care. For immigrants, health literacy is tied to language and culture (Kim and Keefe 2010). Just as language is necessary for access to healthcare, understanding content and context of specific medical situations is also important. Research has shown that Asian-American immigrants often have limited health literacy, which can prevent them from seeking medical services and advice and instead seeking information within their cultural circles (Jones et al 2006, Han et al 2007). The participants who felt comfortable with reading and speaking English all seek their information from newspapers and magazine articles because they have no trouble reading English and Chinese. However the participants with little to no English skills were limited to Chinese radio shows and Chinese newspapers as their source of health information.

Different methods of Taking Care of Health due to Regional differences – The focus groups participants have different regional backgrounds even though they are all immigrants who identify as ethnically Chinese. First, they are from different regions in China (Beijing and Guangzhou). as well as individuals from Vietnam and Taiwan. In one focus group, a participant emphasized that there are regional differences, not just between countries but also within the different regions in China:

> "In the south, they drink lots of types of savory soups (tang). When I was younger I was taught to drink sweet green bean soup (Mung bean soup) with some cane sugar added. But my southern Chinese friends teach me to drink vegetable soups like carrot soup." (Male participant, 71 years old).

One participant wanted to clarify that making "tang" is not completely a Chinese habit, but instead a Southern Chinese habit. This fact is interesting because the participants who were born and raised in Guangzhou, a southern province in China all made references to making "tang" as a form of improving health.

Another interesting difference mentioned in the focus groups is the regional difference in weather patterns affecting food preferences. In the following quote the participant implies that Southern Chinese might avoid certain food types because of the weather:

> Ah yes, you probably do not eat a lot of spicy foods (as a Southerner). There is a saying in Chinese, "Cantonese people aren't afraid of eating anything but spices." (laughs). They are always worrying about too much heat in the body. I think it's because it is very hot in the south (of China). (Female participant, 78 years old)

In the focus group discussions it seems that Chinese immigrants, especially immigrants from Guangzhou pay special attention to "hot" types of foods and avoid eating those types of foods. But in actuality, this habit of "hot" food avoidance seems to be a regional habit and is possibly seen mostly in southern Chinese people.

V. LIMITATIONS

One of the limitations of this study was the selection bias that might have occurred while recruiting participants. All 16 of the respondents were recruited from a community member who was associated with Kaiser Oakland; these individuals are all insured and are covered by Kaiser, which is in no way representative of all elder Asian Americans in the Bay Area. This sample was meant to illustrate some of the elder Chinese American immigrants and was not meant to represent all elder Chinese American immigrants in the Bay Area. Also,

because the individuals were recruited via a health institute, these participants may have been more aware of their health and may have biased their answers to have a more bio-medical perspective in speaking.

Another limitation can be seen in data collection. The location of the focus groups all occurred in a restaurant setting. Although a room in the restaurant was sectioned off from the rest of the restaurant on the second floor of the restaurant, the environment of the restaurant may have disrupted the flow of a focus group and not all the participants may have had a full opportunity to have their voices heard. Another limitation found in data collection is the relationship of the focus group members. In all three focus groups there was at least one couple. In a couple dynamic, one person often was the more dominant speaker and spoke in terms of "we." This would affect the data in that some participants may not have had as much freedom to speak their own opinions or beliefs.

During the translation and transcription process, one limitation was the availability of translators and transcribers, so two translators/transcribers were asked to complete the task. This may have led to differences in translating Chinese words and meanings into English. In order to limit the difference, the first translator and transcriber returned back to the audio to confirm the Chinese/English translations, and matched and clarified the translations done by the second translator and transcriber.

A limitation found within the content analysis process was that coding was done by a single person, the investigator. In a larger study, coding should be standardized and done by multiple coders in order to reduce or eliminate coding bias done by a single person.

Strengths of this study are that it specifically focuses on a rarely interviewed population, the elder Chinese American immigrant population, done in their first language, Cantonese. Another strength of this study is that a fluent speaker of the language analyzed the translation and transcripts to help better elucidate the opinions and beliefs on health and illness within this population.

VI. CONCLUSION

Although this study was not intended for representing all elder Chinese American immigrants, results from these three focus groups summarize this group's Explanatory Models of health and disease. Diet was a large topic of discussion within this group in relationship to maintaining health and causes of illness. The participants' views provide a more rich understanding of what is considered a healthy diet and what is considered a poor diet.

Key findings of this study include:
1. Health is defined by having good energy and mobility and is defined by the body's resiliency to deal with changes to the environment.
2. Eating a healthy diet in terms of getting the right nutrition and eating the appropriate types of food for an individual or the environment is key to

health; having a regular exercise routine (such as hiking or dancing) is important to maintaining health.

3. Illness is defined as lacking energy and lacking the ability to deal with environmental factors such as changes in weather or introduction to pathogens, or stressful family or work place.

4. Illness is caused by events such as excessive heat or excessive cold in the body that may be caused by poor diet or by the environment and by poor health behavior habits. Treatment is from change in diet, exercise, or from medicine.

5. Health maintenance is not just diet and exercise, but rely on maintaining other healthy behaviors such as maintaining adequate and good quality sleep, maintaining regular medication/vitamin regimen, and finding individual activities or activities with family and friends to maintain a state of relaxation and *hoy sum (happiness* 開心)。

6. Diabetes is understood within the participants to be a disease to which an individual may be susceptible due to health-related behaviors, genetics, environment. The elder Chinese participants of this study understand that there is an excess of sugar in the body that is causing the disease. This disease is most likely due to poor diet and lack of exercise.

These findings can be used to help educate health care providers in order to provide more culturally competent health care as well as help improve public health initiatives aimed at this specific population. By providing more culturally competent health care for this population, we can increase adherence to nutritional advice and behavior changes that providers may give as a form of prevention of diabetes or other types of diseases.

Based on the findings from the study, future projects related to this population can hone in on the effect that different backgrounds within this group may bring about different explanatory models. As mentioned in the Discussion section of this paper, there are differences in gender, region, education, and even time of change of immigration status that may affect one's perception of health and disease. These differences convey the necessity for disaggregated data, such that we future projects should consider selection assignments based on immigration status, region of origin, native dialect (such as Cantonese, Mandarin, or Taisanese) and education background. Also, although this was not discussed in this paper, gender may play a role in formation of EMs. In Tirodkar's research, they noted that female respondents had a different focus in their perception of illness than male respondents in that they weighted poor mental health as an important factor causing illness. Is there are gender difference found within the elder Chinese American immigrant population? For possible future studies, focus groups separated by region, education, as well as gender should be considered in order to elucidate possible differences in formation of EMs due to different backgrounds.

Many questions were also brought about during the analysis of these data. One question that was brought up was how much does acculturation of an individual affect their EM of health and disease. Degree of acculturation might also play a role in the formation of an individual's EM. Acculturation explains the process of cultural and psychological change that results following meeting between cultures. The amount of time since immigration, education level, and degree of assimilation to American society can affect an immigrant's belief system. For future studies, tools to determine acculturation should be researched and degree of acculturation should be included within a study as relevant data in analysis.

Finally, to truly understand Explanatory Models, future social scientists and physicians interested in the social context of medicine should delve deeper into understanding an individual's belief system. So far, these three focus groups were able to elicit treatment of disease and belief of etiology (as categorized by Arthur Kleinman), however three other branches are missing in fully understanding an individual's EM: 1) Understanding timing and mode of onset of symptoms; 2) pathophysiology; 3) course of sickness. A more in depth focus group or even a study with a large sample of individual interviews focused on their unique experience of a specific disease state may answer these questions and better reflect a group or even an individual's set of EMs.

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