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Barriers to Health Care Among Laotian Americans in Middle Tennessee

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Abstract

Background. Laotian Americans have unique health beliefs and practices. The cultural differences between Laotian American patients and American health care providers can create challenges in achieving not only evidence-based, but also culturally sensitive care. Although the current literature addresses barriers to health care for Asian Americans, there are few studies related to the Laotian-American minority.

Aim. Describing the particular barriers to preventive and curative care in the Laotian-American population in Middle Tennessee would inform strategies for successful prevention and early treatment programs for this population. The purpose of the study is to describe the health beliefs and barriers to health care services among Laotian Americans in Middle Tennessee.

Method. A cross-sectional study with in-person data collection via a self-administered questionnaire was used. Data were collected from September 2014 to October 2014 at Xai Family Medical Clinic and Wat Lao Buddharam. 312 Laotian Americans in Middle Tennessee participated.

Results: 275 participants were used for data analysis. 77.8% visited primary care providers (PCP) routinely ($P < 0.05$). Based on the multivariate Chi-Square analyses, access to health services was associated with regular visits after controlling for all other demographics and personal beliefs variables in the model. Factors influencing access to health care for the Laotian populations include age, birthplace, time in the US, marital status, health insurance coverage, having a primary care provider, and whether they prefer that their provider speaks Lao. Additionally, access to health care was significantly and negatively associated with whether the participant knows where to get a health check, whether the participant feels well and able to do

everything, and whether the participant is able to pay for health screenings and blood tests. The study did not indicate significant differences between those participants who had low socioeconomic status, low education level, or limited English proficiency. However, the findings also highlight the need for health care providers who can speak a patient's native language.

Discussion: Health care providers could use the study results to develop strategies to positively impact the health promotion and disease prevention activities of the Laotian-American minority. These results may also help health care providers to better understand the context of disparities in accessing to health care services among this minority group of Laotian Americans.

Conclusion: Intervention strategies personalized to cultural beliefs influence barriers to health care. Language and socioeconomic status may be associated with accessing healthcare services when patients are not able to communicate with PCP. Health care facilities could target at-risk subgroups, particularly those who are elderly and those with limited English language ability. Culturally appropriate strategies could also be developed to promote lifelong healthcare access for this population.

Keywords: Laotian, minority, health care access, disparity, cultural differences

Barriers to Health Care Among Laotian Americans in Middle Tennessee

Barriers to health care among the minority group of Asian Americans continue to exist in the United States. Description of barriers among each particular minority group of Asians can significantly improve knowledge and potentially impact access to health care services. For more than 20 years, health care disparities have been well documented according to gender, educational levels, socioeconomic levels, age, race and ethnicity (Robert Wood Johnson Foundation [RWJF], 2014). Health disparities among Asian Americans persist in the quality of care received even when income, health insurance, and access to care are taken into account. However, particular minority groups of Asians from different racial and ethnic minorities are often far worse off than other racial and ethnics majorities (RWJF, 2011).

The Asian American population is the fastest growing racial population in the United States (U. S. Census Bureau, 2012). Asian Americans accounted for 18.9 million people of the U.S. population with 46% growth of Asian Americans between the 2000 and 2010 censuses, a growth rate higher than any other major race group (Asian/Pacific American Heritage Month [APA], 2014). According to the 2012 U.S. Census Bureau, there are 126,377 Asian Americans residing in Tennessee. A subgroup of Asian Americans is the Laotian group. In 2012, the Laotian population in the United States was 232,130 people. Laotians live throughout the 50 states, but major Laotian communities are located in California, Minnesota, North Carolina, Texas, Tennessee and Washington. Although Tennessee has a growing Laotian population, there is no official data related to the Laotian population in the state of Tennessee Census. According to Worra (2009), an estimated 7,000 Laotian Americans reside in Middle Tennessee currently. Laotian Americans began arriving in the United States and Tennessee as early as 1972 (Worra,

2009). Among the diverse Asian American subgroups, the Laotian Americans are a distinctive Asian minority group, based on specific cultural practices, health beliefs, and language. Within this Laotian American population different ethnic and cultural subgroups include Lao, Hmong and Mien. Even though Laotian Americans come from the same country, their backgrounds and cultural beliefs can be different based on these subgroups. In this study, the authors focused exclusively on Laotian Americans (excluded Hmong and Mien). Given the differences among minority groups, identifying the barriers to health care among this particular minority group is important, so that the barriers can be overcome.

In general, the health of Asian Americans has major implications for the future of public health cost. Barriers to health care have not only created a tragic human burden by shortening lives and increasing illness, but also the barriers create an economic burden in the United States. Health inequalities cost the United States billions of dollars in direct and indirect medical expenditures. For instance between 2003-2006, health inequalities among Asian Americans in general accounted for \$11.4 billion in direct medical costs (Hanlon, & Hinkle, 2011; LaVeist, Gaskin, & Richard, 2011). LaVeist, Gaskin, and Richard (2011) also illustrated that 30.6% of direct medical care expenditures for minority groups is related to health disparities. This study calculated that eliminating health disparities for minorities would reduce direct medical care expenditures by \$229.4 billion and would also reduce indirect costs associated with illness and premature death by more than \$1 trillion. The combined costs of health disparities and premature death among minority groups in the United States were \$1.24 trillion between 2003-2006 (LaVeist, Gaskin, & Richard, 2011).

Despite efforts to address the issue of racial and ethnic disparities in health and health care in the United States, the Laotian Americans continue to be an underserved population due to

barriers. In fact, several studies reported factors influencing limited access to health care among Asian Americans including the lack of health insurance, transportation, language interpretation services, and regular sources of healthcare (Chang, Feller, & Nimmagadda, 2009; Kim & Keefe, 2010; Kwong, Stewart, Aoki, & Chen, 2010; Misra, Jiobu, Zhang, Liu, Li, Kirkpatrick, & Ho, 2013; Xiong, Nguyen, Strayer, Chanthanouvong, & Yuan, 2013). Even though these structural barriers to healthcare services are common across cultures, the strategies required to address these barriers vary from group to group. To understand this diversity, programs need to be tailored to the unique needs and resources of minority communities. The purpose of this study is to describe the health beliefs and barriers to health care services among Laotian Americans in Middle Tennessee.

Background/ Review of Literature

Laotian Americans deal with illness and disease in a unique manner. In general, Laotian Americans who are sick will first seek care from family, friends, or community leaders. They try traditional treatments initially. If the loss of spirit is thought to be the cause of the illness, then a ceremony is performed by a family member, elder, or Acharn (teacher/healer). Accessing the United States healthcare system is the last resource. Even though Western medicine is utilized, traditional practices are often continued. Laotian American cultural values and beliefs about disease influence when, where, and how an individual seeks health care. Because of these traditional approaches to health care, Laotian Americans may not be aware of the value, identify the purpose, or see the necessity in obtaining preventive care. In general, Laotian American values, beliefs and behaviors contribute to the late stage of diseases that often leads to untreatable conditions (Kwong et al, 2010). Because many Laotian Americans lack familiarity

with the United States healthcare system, many misinterpret the functions of various diagnostic techniques and treatments. For example, some believe that X-rays are able to see everything that is wrong with an individual. According to Uba (1992), some Laotian Americans think that physicians can identify the source of a medical problem at first sight without further tests. Other Laotian Americans may accept the physician's prescription, but not fill it. If Laotian Americans obtain prescription medication, they may adjust the dosage without telling the physician to avoid embarrassing anyone. Laotian Americans may also stop taking a medication when symptoms disappear, rather than completing the prescribed dosage. Despite relatively easy access to health care in this country, Laotian Americans remain an isolated population because of cultural practices and beliefs, language barrier, and low socio-economic status (Xiong et al, 2013).

Due to the delay in seeking health care services, the Laotian American subgroup has higher mortality rate of death related to cancers compared to non-minorities (Kwong, et al., 2010). Yang and Mill (2009) reported that Laotian populations experience different cancer risks. Frequently Laotians are diagnosed with nasopharyngeal carcinoma (NPC), lung cancer, liver cancer, and gastric carcinoma. This study indicated the top five cancer locations for Laotian men are liver, lung and bronchus, colorectal, stomach, and oral cavity. For Laotian women the most common sites are cervix, breast, lung and bronchus, liver, and colorectal cancers. An additional study by Gomez et al., (2013) illustrated that Laotian Americans in California had increased incidence for prostate and colorectal cancer in men and cervix and breast cancer in women.

A leading cause of liver damage and liver cancer in the Laotian Americans is chronic hepatitis B. Kwong et al. (2010) reported that disparities in hepatocellular carcinoma survival among Californians of Asian ancestry indicated that Laotian men in California not only experienced liver cancer as the most common type of new cancer cases from 2000 to 2004, but

also these Laotian men frequently succumbed to liver cancer making it the second leading cause of cancer death (Surveillance Epidemiology and End Results [SEER], 2000 - 2004).

Because of limited access to preventive health care, Laotian populations experience a high risk for liver cancer related to unrecognized and untreated hepatitis B. Multiple studies among Asian Americans illustrated that chronic hepatitis B is a leading cause of liver damage and liver cancer in Asian Americans (Hu, Pan, & Goodwin, 2011; Kim & Keefe, 2010; Kwong et al., 2010; Misra et al., 2013; Pollack et al., 2011; Xiong et al., 2013). Because little has been done to address barriers to health care among Asian Americans, very little literature has addressed the particular needs or health status of Laotian Americans. A significant gap in literature exists for this particular population.

The literature reported that the factors associated with barriers to health care services among Laotian Americans included lack of knowledge, language insufficiency, cultural beliefs and practices, and low socioeconomic status (Kim, & Keefe, 2010; Kwong et al., 2010; Pollack et al., 2011; Xiong et al., 2013). In Minnesota a similar study by Xiong et al. (2013) reported that many Laotian Americans were not aware of HBV or its complications. As many as 58% of Laotian participants reported they had never heard of HBV, 82.6% had never been screened for HBV, and 86.6% failed to receive the recommended HBV vaccine (Xiong et al., 2013).

Limited understanding of the English language is another barrier to health care access documented in the literature for Laotian Americans (Chang, Feller, & Nimmagadda, 2009). The inability to communicate effectively, combined with relatively few Asian-speaking providers, could hinder patients from seeking health care. Xiong and colleagues (2013) reported that 63.1% of the Laotian (patients) participants had English insufficiency. Language continues as an issue in health care access for the Laotian population.

Cultural beliefs and practices play a major role in the utilization of health care services by Laotian Americans. Traditionally, Laotians practice preventive health by using herbal medicines from the home country and manage disease independently. However, when physiological signs and symptoms become too burdensome, they will then seek help from a health care provider. Since Laotian Americans characteristically believe that blood is not renewable and is a vital energy source for the body (Hu, Pan, & Goodwin, 2011), even a low volume blood draw is perceived as negatively affecting body organs and health. Many Laotian Americans believe that a positive test for hepatitis B would indicate a hopeless diagnosis of liver cancer. Xiong and colleagues (2013) not only reported this belief, but also documented that 44.3% of Laotians believed that HBV could be treated or prevented. Dang, Lee and Tran (2010) studied the knowledge, attitudes, and beliefs about breast and cervical cancer screening among Cambodian, Laotian, Thai, and Tongan women. This study showed that 52.8% of participants did not believe that breast cancer could be prevented, and 57% of women believed that a mammogram was needed only when they had a breast lump.

Socioeconomic status (SES) is another barrier to health care for Laotian Americans. Many Asian Americans struggle with poverty, low wage jobs, and lack of health care coverage. More than 60% of Laotian Americans in Minnesota had an annual income of less than \$20,000 (Xiong et al., 2013). Language barriers contribute to employment at low pay rates and at jobs without health insurance benefits. Many employers prefer employees fluent in English. Xiong et al. (2013) reported as many as 70% of Laotian Americans did not have health insurance. Because Laotian immigrants experience difficulty in improving their SES, they continue to struggle with the negative effects of low SES on health. One negative effect of low SES is the delay in seeking health screening and treatment for preventable chronic diseases, such as HBV.

The Laotian American minority might be a group in which the link between health care barriers and access could be illustrated. Perhaps such illustration could be transferable to other minority populations struggling with health care barriers and access. Literature review of the few publications related to Laotian cultural beliefs and health practices suggests an underused health system.

Theoretical Framework

The theoretical framework for this study is based on the Aday and Andersen's framework, and Health Belief Model (HBM). Aday and Andersen's framework contains three sets of predictive factors including predisposing, enabling, and need factors. The predisposing and enabling factors will be used to assess the characteristics of Laotian population. Although the HBM consists of six components, which include perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cue to action, and self-efficacy, this study will only focus on the concept of perceived barriers. The selected components of these two theories provide a theoretical framework for this study. The Aday and Andersen's model explores the characteristics of Laotian population that may be factors explaining this population's underutilization of the U. S. health system. Additionally, the HBM describes the cultural beliefs and health practices among Laotian Americans that effect why they would be less likely to use the health system in this country.

Aday and Andersen's model is used to assess the characteristics of the individuals that may be a factor influencing health care access. This model has potential usefulness when studying barriers to health care access related to usual resources. According to Aday and Andersen (1974), the predisposing factor describes demographic characteristic such as age, sex,

and marital status. The enabling factor is used to identify items that are barriers to health care such as insurance status, income, family and community resources (Aday, & Andersen, 1974; Derose, Grezeng, & Ringel, 2011). Aday and Andersen (1974) specified that having a regular source of care is one of the most important factors enabling health care access. In addition, demographic characteristics have influenced the health behaviors and health outcomes among Asian Americans because individuals with low socioeconomic status are less likely to seek health services (Chang, Feller, & Nimmagadda, 2009; Kim, & Keefe, 2010; Kwong et al., 2012; Misra et al., 2013; Xiong et al., 2013). Therefore, the purpose of this study will draw from the Aday and Andersen framework to better understand Laotian socioeconomic status related to decision-making to access health services.

The Health Belief Model is used to examine the health beliefs and behavior among Laotian Americans in Middle Tennessee. The HBM was developed in the early 1950s by social scientists at the U.S. Public Health Service to assess individuals' behavior and beliefs related to participation in programs to prevent and screen for disease (Janz, Champion, & Strecher, 2002). This model will help describe why Laotian Americans would or would not use the health system in disease detection and prevention programs. Although many studies have used the concept of perceived barriers including cultural beliefs, language insufficiency, lack of knowledge and low socio-economic status (Hwang, Huang, & Yi, 2008; Kue, 2013; Ma, Fang, Shive, Toubbeh, Tan, & Siu, 2007), for the purpose of this study, the concept of perceived barriers will describe individuals' beliefs and health practices that may have direct effect on barriers to health care. Since the health system in this country is complicated and difficult for many Laotian Americans to understand, the HBM will be used as a guide to examine the cultural beliefs among Laotian Americans. Health Belief Model has been used in previous research related to hepatitis B

screening and vaccination behavior with Asian Americans (Hwang, et al., 2008; Janz, Champion, & Strecher, 2002; Kue, 2011; Ma, Fang, Shive, Toubbeh, Tan, & Siu, 2007; Tanaka, Strong, Lee, & Juon, 2013). These studies used HBM as their guide to measure barriers to screening behavior and attitudinal variables among minority groups.

The Health Belief Model is helpful in explaining the cultural beliefs and health care behavior among Asian Americans. With respect to the concept of perceived barriers, the results confirmed that limited English language, lack of knowledge about the United States health system, and low socioeconomic status were issues that prevented Asian-Americans from seeking health care (Kwong et al., 2010; Ma et al., 2007; Yang & Mills, 2009).

Methodology

Design

The design for this study was a descriptive, cross-sectional study using in-person data collection via a questionnaire. The participants were from Laotian community-based organizations including a faith-based organization and a service-based organization in Middle Tennessee. The 37-item survey queried participants about barriers to health care and health beliefs of Laotian Americans in Middle Tennessee. The survey was developed based on the concept of perceived barriers from the Health Beliefs Model (HBM), and predisposing and enabling factors from Aday and Andersen's Framework. This survey questionnaire focused on the HBM concept of perceived barriers and adapted from Rose (2012), which was originally adapted from Champion's HBM Scale (1984). Fifteen items were adapted from the 16-item barrier subscale in the Rose's HBM scale (2012). Four items were developed based on the qualitative survey to fit with the Laotian population in Middle Tennessee. The common perceived barriers to accessing health care were assessed with 18 items using a Likert-type scale.

A higher score indicated a greater perceived common barrier. In addition to the 19 perceived barrier questions and 18 closed-ended demographic items (e.g. age, gender, ethnic background, marital status, education level, English language ability, insurance status, and income), items related to health visiting and medical history were also included. The instrument was translated into Lao language for those who were unable to read or understand English. Twenty-five Laotian adults reviewed the survey to determine accuracy of the survey translation. This survey instrument was administered to Laotian Americans in Middle Tennessee at two different sites, Xai Family Medical Clinic and Wat Lao Buddharam. The study procedure was approved by the Belmont University Institutional Review Board.

Sample and Data Collection Procedures

The 312 participants were recruited at the Xai Family Medical Clinic (XFMC) and Wat Lao Buddharam (WLB). Advertisements included posters, onsite flyers, and word of mouth. The posters were placed at the Asian stores throughout Middle Tennessee. Onsite flyers were also given to potential participants. The principal investigator (PI) described the purpose and procedures of the study prior to the participant signing the consent form. Consent was obtained for each participant prior to survey distribution. Each participant had the opportunity to complete the survey voluntarily. Participants had the choice of completing the survey in English or Lao.

At both locations a private room was provided for participants to complete the survey. The PI left the room while the participants completed the survey, and the participants placed the completed survey in a large envelope to ensure confidentiality during data collection. Each participant was assigned a unique number and all survey data were identified with that unique number rather than by participant's name. The key linking the participant's name to the unique number was kept in a locked file separated from the completed surveys. Additionally, all signed

consent forms were stored in a locked drawer separated from the key and the completed surveys. The unique number was placed on the survey to ensure that an individual would not complete the survey more than once. However, no personal identifying information was obtained on the survey. After consented participants completed the survey, the participants put the completed survey in the envelope and notified the PI. The participants received either a T-shirt or \$5 as a token of gratitude for their participation. The principal investigator would reenter the room and retrieve with the completed surveys.

Implementation

The target population for the scholarly project included Laotian Americans residing in Middle Tennessee, 18 years and older, men and women, who spoke and understood English or Lao. These participants came to either Xai Family Medical Clinic or Wat Lao Buddharam to participate in the survey. Three hundred twelve participants volunteered to participate in this study. The principal investigator identified and trained two people who spoke both English and Lao to help with recruitment at Xai Family Medical Clinic and Wat Lao Buddharam.

The preparation for project implementation occurred in August 2014. During this period, all supplies were prepared to initiate the scholarly project. By August 31, 2014, the posters were placed at the Asian stores throughout the Laotian communities in Middle Tennessee. The trained assistants distributed flyers to potential participants on September 1, 2014 at the XFMC and on September 6 and 7, 2014 at the temple events. Participants were consented and surveys distributed beginning on September 1, 2014. The goal of 300 participants was achieved on October 5, 2014.

Data Analysis

Descriptive statistics were used to report the demographic variables (age, gender, birthplace, years lived in US, marital status, education level, household income, insurance status, English language proficiency, regular health care provider visit, language of health care provider). See Table 1. Chi-square multivariate analyses were performed to examine the associations between demographic variables related to Aday and Andersen's framework of barriers, also perceived barriers related to the Health Belief Model, and the probability of accessing health care. To examine these two theories' framework components in relation to barriers to health care and routine primary care provider (PCP) visits, the principal investigator performed comparisons between participants who had visited their PCP and those who had not visited their PCP using Chi-square analyses. These associations were expressed in the form of the p value of 0.1(*), 0.05(**), and 0.001(***), which indicated the strong evidence of a relationship between dependent and independent variables. Data analyses were performed using the SPSS statistical software (version 22).

Results

Demographic Characteristics of Participants

The sample was 312 Laotian Americans residing in Middle Tennessee. Thirty-seven participants were excluded from the data analysis due to missing or incomplete information. The remaining sample of 275 participants was used for data analysis. The authors evaluated whether the number of participants who reported visits to health care service ($n = 214$) was equal to the number of participants who reported not visiting health care service ($n = 61$). The data was analyzed using a Chi square test. The null hypothesis was rejected with the p value <0.05 . More

than half (77.8%) of the participants reported visiting health care services regularly and 22.2% indicated they did not. See Table 1 for demographics and characteristics of participants.

The average age of study participants was 49.32 years (SD = 14.4) and most were male (51.6%). The majority of the participants were born outside of the United States (89.1%) and had lived in the United States (US) for an average of 27.91 years (SD = 7.9). Approximately 87% of participants reported living in the US for 20 years or more. However, 37.1% indicated limited English speaking ability. Half of the participants reported high school as their highest level of education (50.9%) with markedly lower percentages for college (8.9%) and vocational education (9.8%). Most participants were married (70.2%), 18.5% were single and 11.3% were divorced or widowed. Thirty-seven percent of the study participants reported household incomes of \$20,000 to \$40,000 per year; 19.6% earned \$40,000 to \$60,000, and 8.4% earned \$60,000 or more. Interestingly, approximately 35% reported a yearly household income less than \$20,000. However, most of participants not only had health insurance (87.6%), but also had a primary care provider (74.5%). Eighty-four percent reported a preference for a primary care provider (PCP) who could speak Lao.

Perceived Barriers and Access to Health Care

All participants were asked about regular visits with their primary care provider for illness and wellness care. The majority (77.8%) reported regular follow up with their PCP. Specifically, 39.3% reported a PCP visit within the past three months; 27.6% reported their most recent PCP visit between four to six months ago, 12.0% reported the most recent visit between seven to twelve months ago, and 21.1% of the participants had not visited their health care provider within the past year.

Aday and Andersen's Framework Variable and Access to Health Care

The data from this study revealed strong evidence of a relationship between demographic characteristics of this sample and access to health care services. As people aged, they tended to increase visiting their PCP. Nearly half (47.8 %) of the participants between 18 and 34 years of age did not visit a PCP, while those who were 66 years old or more all visited their PCP regularly (100%; $p < 0.001$). Length of residency in the US was also significantly different. Fewer participants with residency in the US for less than 20 years had regular PCP visits (64.7%) compared to those with residency in the US for 30 years or more (86.1%, $p < 0.01$). Marital status also had very strong evidence of relationship to accessing health care services. Married participants ($n = 193$) reported that they visited their PCP (81.9 %,) regularly compared to those without married (single) partners ($n = 51$, 58.8%). Additionally, the divorced/widowed participants also reported access to health care, with 83.9% among this group ($n = 32$) indicating that they visited their PCP regularly ($p < 0.001$).

Other factors considered as barriers were not significantly correlated to the demographic characteristics of the sample including employment status, level of education, and household income. However, those who had health insurance ($n = 241$, 87.6%, $p < 0.001$) indicated greater access to health care more than those who did not have health insurance ($n = 34$, 12.4%). Among those reporting health insurance, 83.4% reported that they visited their PCP regularly, while only 16.6% did not. For those who did not have health insurance, 61.8% reported that they did not visit their PCP regularly.

Health Belief Model Variables and Access to Health Care

Eighty-four percent of the sample knew where to obtain regular illness and wellness care; 91.6% of the participants had transportation to their health care provider. A majority (61.2%)

reported that regular health visits were necessary, even when they felt well and able to do everything. Although 65.5% (n = 180) reported it was useful to know personal health risks, 34.5% (n = 95) indicated that disease prevention was futile. Twenty-three percent (23.3%) reported fear of a positive test result, for example a positive screen for Hepatitis B. Twenty-one percent reported an inability to pay for health screenings and blood tests. A large majority of the participants (79.3%) reported positive ability to communicate with their PCP and 89.5% trusted their health care provider. See Table 2.

Perceived barriers and beliefs about access to health care were also assessed through the questionnaire. The most common barriers reported in this study were: “I don’t know where to get my health check” (15.6%, n = 43), “I feel well and able to do everything, so it is not necessary to get my health check” (17.8%, n = 49), and “I can’t afford to pay for health screenings and blood tests” (21.1%, n = 58).

Although 15.6% of the participants agreed that they did not know where to get their health check, 65.1% of this particular sample reported visiting with their health care provider regularly (n = 28, p <0.029). See Table 3. Although participants who reported not having transportation (n = 23), 73.9% (n = 17) within this group visited their PCP routinely. About 17.8% (n = 49) believed that it was not necessary to get their health check if they felt well and able to do everything; however, over half (61.2%, n = 30, p <0.002) of this particular group visited their PCP regularly. About 34.5% (n = 95) believed that it was not useful to know their personal health risks; however, 78.9% (n = 75) reported that they visited their PCP consistently. Despite reporting inability to pay for these services, the majority of this specific group (76.2%, n = 39, p <0.029) visited their PCP regularly. The full list of perceived barriers items related to health beliefs and frequencies for this study are reported in Table 2 and Table 3.

Discussion

Aday and Anderson's Framework Factors Associated with Access to Health Care

The decision to seek health care may be influenced by multiple factors for Laotian Americans in Middle Tennessee. However, the factors with strong evidence relationships in this population include age, residency in the United States, marital status, health insurance, and provider who could speak native language. As people get older and lived in the US longer, they tended to adapt to the Western health care system better than those who were younger and had shorter US residency. Reasons for these results could be that older participants had more chronic disease, and had more completely assimilated into the Western culture. However, a unique finding within this study population was having a marriage partner ($n = 193$, 70.2%) illustrated the strong evidence relationship for access to health care service compared to those without a marriage partner (81.9% vs 58.8%, $p < 0.001$). Another distinctive finding among Laotian-Americans in Middle Tennessee was participants with limited English speaking ability were more likely to visit their PCP regularly than those who spoke English fluently (78.3% vs. 77.7%). The continued regular PCP visits among those with limited English speaking ability is different from findings in other studies (Chang, Feller, & Nimmagadda, 2009; Dang, lee, & Tran, 2010; Mirsa et al., 2013; Xiong et al., 2013). A potential explanation for this finding is the presence of a Laotian-speaking PCP in Middle Tennessee. Because of this unique resource within the Middle Tennessee region, the barrier of language between care recipient and provider was eliminated. The other studies may not have had a PCP who spoke the participants' native language potentially explaining the different study results.

The study findings also demonstrated no significant correlation between the barriers to access health services and socioeconomic status, employment, household income or education level. The study findings are similar to other studies' findings related to participants' reported insurance coverage. The participants who had health insurance were more likely to access health care service regularly than those who did not have health insurance (83.4% vs. 38.2%, $p < 0.001$). The difference between this study and other studies of Asian Americans may be explained with the anecdotal knowledge that the Laotian-speaking PCP in Middle Tennessee explained health insurance benefits related to illness and wellness care in a manner that native speakers could understand (Chang, Feller, & Nimmagadda, 2009; Dang, lee, & Tran, 2010; Mirsa et al., 2013; Xiong et al., 2013, Yang, & Mills, 2009).

Health Belief Model Factors Associated with Barriers to Health Care

This study identified barriers to health care among Laotian-Americans in Middle Tennessee. The rate of regular PCP visits was high for this population. The results indicated several barriers related to beliefs and access to health care. Some participants believed that they did not know where to get a health check ($n = 43$), yet 65.1% within this group visited a PCP regularly. Some participants ($n = 23$) reported that they did not have transportation to visit their PCP, but the majority within the group (73.9%) visited their PCP routinely. The results demonstrated strong evidence of a relationship between the participants who believed that it was not necessary to get their health check when they felt well and able to do everything and access to health care. Sixty-one percent within the group ($n = 49$) visited health care service while 38.8% did not, $p < 0.002$. Perhaps the Laotians in this study did not realize that these were personal barriers to access health care or did not see these as reasons for not visiting a health care provider. The other perceived barriers were not significantly correlated including "it's not useful

to know my risk," "I fear a positive result," "I do not trust health care providers," and "I cannot understand or talk with the doctor." The final important perceived barrier indicated belief of inability to pay for health screenings and blood tests. However, a majority (78.9%) within this group (n =58) visited PCP regularly. Perhaps convenience of a Laotian PCP was a positive influence combined with low fees or free care for those who could not afford health care services.

Limitations

This survey study used non-probability convenience sampling. The majority of participants (n = 177, 64.4%) completed the study survey at the clinic where they receive health care from a Laotian PCP who was also the principal investigator. The tool used in this study is a new, untested tool without content validity. Another study limitation was that the perceived barriers data related to Donabedian's structure concept is not reported here. Waiting time (a structure concept) may influence willingness to schedule a routine health care appointment. In Laos, for example, patients expect to walk into a clinic or practice, take a number, and wait for the provider, instead of being scheduled for a specific time. However, within this Middle Tennessee Laotian community, patients did not have to make an appointment to visit the Laotian PCP. Because of the provider's commitment to serve his culture and communities in Tennessee, the PCP removed barriers that other studies may not have been able to mitigate.

Implications

This study provides insight into the perceptions of barriers to health care services among the sub-minority group of Laotian Americans. Health care providers may be able to use the

project results to develop strategies to positively impact health promotion and disease prevention activities of the Laotian-American minority. These results may also help health care providers to better understand the context of disparities in access to health care service among this minority group of Laotian Americans. Health disparities among the minority group of Asian Americans affect individuals and society. Not only quality of life, but also the ability to achieve an individual's potential is greatly diminished when inadequate access to health care exists. Eliminating health disparities among racial and ethnic minorities is one goal of *Healthy People 2020* (RWJF, 2014). Although complete elimination of barriers to health care among this minority population may not be possible, the impact of a service-minded native speaker PCP willing to financially underwrite healthcare in a specific Laotian-American community is important. This study may also serve as one step toward eliminating health disparities not only for the minority group of Laotian Americans in Tennessee but also for other minority groups as well.

Conclusions

The study findings revealed that factors influencing access to health care for Laotian populations include age, residency length in the US, and health insurance coverage. Additionally, perceived barriers were significantly and negatively associated with access to health care. The study did not indicate significant differences between those participants who had low socioeconomic status, low education level, or limited English proficiency. The results are unexpected and interesting because the majority of participants had visited their PCP regularly. In fact, the growth in visits to primary care providers among participants not only is a positive sign of improved access to health care, but also indicates that the majority of Laotian Americans

in Middle Tennessee do not report barriers to health care. However, the findings highlight the health care provider who speaks a patient's native language impact on lowering barriers to health care. Future studies could include the Donabedian frameworks and other components of the Health Belief Model. Additionally, future studies could evaluate health care providers serving minorities to determine health care access not only for Laotian Americans, but also for other minority populations.

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Table 1 Demographic characteristics of the participants (N = 275)
Columns indicate whether participants visit Primary Care Provider regularly or not regularly

Characteristic	Total N = 275(100%)	Visit PCP n = 214(77.8%)	Not Visit PCP n = 61 (22.2%)	P Value
Age, years (Mean, SD)	49.32(14.4)			
18 – 34	46 (16.7)	24 (52.2)	22 (47.8)	<0.000***
35 – 50	102 (37.1)	78 (76.5)	24 (23.5)	
51 – 65	88 (32.0)	73 (83.0)	15 (17.0)	
66 +	39 (14.2)	39 (100.0)	0 (0.0)	
Gender				
Male	142 (51.6)	112 (78.9)	30 (21.1)	0.66
Female	133 (48.4)	102 (76.7)	31 (23.3)	
Birth place				
Outside of USA	245 (89.1)	199 (81.2)	46 (18.8)	<0.000***
In USA	30 (10.9)	15 (50.0)	15 (50.0)	
Time in USA (Mean, SD)	27.91 (7.9)			
<19 years	34 (12.4)	22 (64.7)	12 (35.3)	<0.010**
20 – 30 years	126 (45.8)	93 (73.8)	33 (26.2)	
31 +	115 (41.8)	99 (86.1)	16 (13.9)	
Marital status				
Single	51 (18.5)	30 (58.8)	21 (41.2)	<0.001***
Married	193 (70.2)	158 (81.9)	35 (18.1)	
Divorce/Widowed	32 (11.3)	26 (83.9)	5 (16.1)	
Highest Education level				
<High school	56 (20.4)	49 (87.5)	7 (12.5)	0.209
High school	140 (50.9)	103 (73.6)	37 (26.4)	
College graduate	52 (18.9)	41 (78.8)	11 (21.2)	
Post-Graduate	27 (9.8)	21 (77.8)	6 (22.2)	
Household income				
<\$20,000	96 (34.9)	70 (72.9)	26 (27.1)	0.347
\$20,001 - \$40,000	102 (37.1)	83 (81.4)	19 (18.6)	
\$40,001 - \$60,000	54 (19.6)	41 (75.9)	13 (24.1)	
\$60,001 +	23 (8.4)	20 (87.0)	3 (13.0)	
Has health insurance				
Yes	241 (87.6)	201 (83.4)	40 (16.6)	<0.000***
No	34 (12.4)	13 (38.2)	21 (61.8)	
Speak English				
Not at all	46 (16.7)	36 (78.3)	10 (21.7)	0.057
A little	56 (20.4)	50 (89.3)	6 (10.7)	
Fluently	173 (62.9)	128 (74.0)	45 (26.0)	
Has Primary care provider				
Yes	205 (74.5)	183 (89.3)	22 (10.7)	<0.000***
No	70 (25.5)	31 (44.3)	39 (55.7)	
Prefer Provider speak				
Lao	232 (84.4)	186 (80.2)	46 (19.8)	<0.029*
English	43 (15.6)	28 (65.1)	15 (34.9)	

Note: * P <0.05; ** P <0.01; *** P <0.001

Table 2 Perceived Barriers

N = 275	Agree n = 61 (22.2%)	Disagree n = 214 (77.8%)
HBM		
I don't know where to get my health check	43 (15.6)	232 (84.4)
I don't have transportation	23 (8.4)	252 (91.6)
I feel well and able to do everything, so it is not necessary to get my health check	49 (17.8)	226 (82.2)
It's not useful to know my risk	95 (34.5)	180 (65.5)
There is nothing we can do to prevent diseases	99 (36.0)	176 (64.0)
I fear of a positive results	64 (23.3)	211 (76.7)
I can't afford to pay for health screenings and blood tests	58(21.1)	217 (78.9)
I do not trust health care providers	29 (10.5)	246 (89.5)
I cannot understand or talk with the provider	57 (20.7)	218 (79.3)

Table 3 Perceived Barriers and visiting primary care providers

N = 275 HBM	Visit provider n = 214 (77.8%)	Not visit provider n = 61 (22.2%)	P value
I don't know where to get my health check			
Agree	28 (65.1)	15 (34.9)	<0.029*
Disagree	186 (80.2)	46 (19.8)	
I don't have transportation			
Agree	17 (73.9)	6 (26.1)	0.638
Disagree	197 (78.2)	55 (21.8)	
I feel well and able to do everything, so it is not necessary to get my health check			
Agree	30 (61.2)	19 (38.8)	<0.002**
Disagree	184 (81.4)	42 (18.6)	
It's not useful to know my risk			
Agree	75 (78.9)	20 (21.1)	0.743
Disagree	139 (77.2)	41 (22.8)	
There is nothing we can do to prevent diseases			
Agree	78 (78.8)	21 (21.2)	0.772
Disagree	136 (77.3)	40 (22.7)	
I fear a positive results			
Agree	49 (76.6)	15 (23.4)	0.783
Disagree	166 (78.2)	47 (21.8)	
I can't afford to pay for health screenings and blood tests			
Agree	39 (76.2)	19 (32.8)	<0.029*
Disagree	175 (80.6)	42 (19.4)	
I do not trust health care providers			
Agree	75 (78.9)	20 (21.1)	0.743
Disagree	139 (77.2)	41 (22.8)	
I cannot understand or talk with the provider			
Agree	45 (78.9)	12 (21.1)	0.818
Disagree	169 (77.5)	49 (22.5)	

Note: * P <0.05; ** P <0.01; *** P <0.001