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A Community-Based Education on Cardiovascular Diseases among Vietnamese Buddhist Nuns

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A Community-Based Education on Cardiovascular Diseases among Vietnamese Buddhist Nuns

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Abstract

Background: According to the World Health Organization, cardiovascular diseases (CVDs) are the leading cause of death (31%) worldwide. Out of those cases, 85% are due to heart attack and stroke. Hypertension is among the most modifiable risk factors for the development of cardiovascular diseases. Since Vietnamese Buddhist nuns have diets high in salt, this makes them at higher risk for hypertension and CVDs.

Purpose: This educational project aims to improve cardiovascular health knowledge among Vietnamese Buddhist nuns in the greater Seattle area by implementing culturally tailored community-based health education programs virtually via phone.

Methods: A community-based educational program on CVDs for Vietnamese Buddhist nuns was presented virtually via phone by the DNP student in individual sessions. This session included pre-and post-educational tests to assess CVD knowledge and its prevention among Buddhist nuns. This project used evidence-based knowledge to provide culturally-tailored information on CVD for the Vietnamese Buddhist nuns, who are an under-served population in the Seattle area. The assessment of knowledge was done before and after intervention using a survey questionnaire.

Results: Five Buddhist nun participants showed an overall improvement of CVDs knowledge after the post-intervention section. The percentage of correct responses to general knowledge about CVDs improved 28% from 64% (pre-intervention) to 92% (post-intervention). The percentage of participants that reported right answers about CVDs signs / symptoms was increased by 40%, and high salt intake, stress level and family history of CVDs were all increased by 20% respectively. Therefore, the desired project goal was achieved.

Conclusion: All the nun participants' CVDs knowledge was improved after the education session. This community-based educational program empowers nuns to seek early care for their health, reduces the fear of stigma about health and religious practices, and increases their common knowledge about CVDs.

Keywords: *Vietnamese Buddhist nuns, Vietnamese American Women, Southeast Asia –American Women, health screening, cardiovascular disease, hypertension, chronic disease screening, evidence-based intervention.*

A Community-Based Education on Cardiovascular Diseases among Vietnamese Buddhist Nuns

Chronic cardiovascular diseases [CVDs] or coronary heart disease, including heart attacks and strokes, are the number one cause of death worldwide, with an estimate of 17.9 million (31%) cases yearly (World Health Organization [WHO], 2017). In the United States, CVDs cause an overwhelming burden which is estimated to cost \$219 billion per year for health care services, medicines, and loss of productivity (Center of Diseases Control and Prevention [CDC], 2020). Furthermore, CDC (2020) emphasized that in the U.S, heart disease is responsible for one out of five women's death; it is the leading cause of death for women. According to Thomas et al. (2018), hypertension [HTN] is the leading single risk factor for CVDs. HTN and an unhealthy lifestyle and diet, are among the main modifiable risk factors responsible for leading to CVDs and their complication burdens. Maintaining healthy lifestyles, a low sodium diet, regular physical exercise, healthy weight, and early screening and treatment of HTN are significantly effective methods to reduce the number of CVD deaths and burdens.

Previous studies confirmed the low-level awareness of CVDs' risk factors and low health care utilization in the general Vietnamese American population (Ancheta, 2017; Lopez, 2018; Pham, Rosenthal & Diamond, n.d; Duong, Bohannon & Ross, 2001; Nguyen, Liao, Gildengorin, Tsoh, Bui-Tong & McPhee, 2009; Coronado, Woodall, Do, Li, Yasui & Taylor, 2008; Joe et al., 2018; Do, Geleijnse, Le, & Feskens, 2015; Iyer et al., 2019). Traditionally Vietnamese Buddhist nuns have diets high in salt and oil and low levels of exercise. These factors along with low levels of awareness of CVDs' risk factor and low health care utilization make this population at higher risk for CVDs and its complications.

Background

Buddhist nuns are also called monastics or teachers, Buddhist professionals, Buddhist spiritual leaders, or “su co” (O’Brien, 2019). Historically, about 25 centuries ago, when there was no monastery or temple, Buddha was just a “wandering teacher” who traveled and taught through cities and villages for the last 40 years of his life (O’Brien, 2019). Many people were impressed by the simple way he lived as well as the simple principles of his teaching, which nurtures a peaceful and respectful nature. Thousands of people started following, listening, and practicing Buddha’s teaching (O’Brien, 2019). Carrying on his legacy of teaching and a simple lifestyle, Buddhist nuns present peace and knowledge.

According to Dinh (2018), spiritual leaders have meaningful support and guidance for many people when coping with distress. Buddhist nuns play many vital roles in ritual and the Vietnamese community's religious-related mental health, especially the Vietnamese -American immigrant population. Buddhist nuns dedicate their lives under vows of poverty, celibacy, abstinence from alcohol and all potential addicted substances, live a homeless monastery life, and obedience in the enclosure of a monastery to devote their life to take care of their community and others (O’Brien, 2019). However, there is very little evidence about how Buddhist nuns take care of their health.

Buddhist nuns shave their hair for the practice of “non-attachment” especially to their body or their self-image (Wijesinghe & Mark, 2013). Through years of practicing, Buddhist nuns do not pay much attention to “the body” because they focus more on “the mind” part of their health. They emphasized that they live above illness and most nuns place their spiritual duty to the community as the most important aspect and make their health less of a priority (Wijesinghe & Mendelson, 2013; Wijesinghe, 2014).

Buddhists believe in impermanence, which means the ever-changing cycle of any condition, and “birth, aging, sick, die” as a circle of life. The nuns have strong spiritual beliefs in the Buddha and practice impermanence in coping with chronic disease (Wijesinghe & Parshall, 2013). Even though most Buddhist nuns agree to talk about their chronic illness, they do not want to talk about it in length (Wijesinghe & Parshall, 2013). Therefore, Buddhist nuns’ decisions to seek professional resources such as formal screenings and treatments may be delayed. The fact that Buddhist nuns have different practices and coping systems can also pose a challenge for health assessment and education about risk factors, prevention, diagnosis, and treatment of their chronic diseases.

Traditionally, most people, including most healthcare providers, generally have high respect for religious professionals. Culturally, many Asians consider their religious professionals as knowledgeable guides and teachers who have higher authority levels than them (Tanaka, 2011). Therefore, it is more difficult to assess Buddhist nuns' level of knowledge about diseases or to convey an open conversation to ask questions about their chronic health conditions or health screening and preventions for fear of being impolite and improper.

Generally, Buddhist practice protects nuns from many risks of hypertension, such as reducing stress in life. Strong religious belief in Buddhism, practicing meditation, and living a simple life helps relax and reduce stress. Although vegetarian diets are associated with reduced incidence of coronary heart disease and mortality, vegetarian behaviors and diet are not associated with reduced risk of hypertension and strokes (Meng, Zhang, Shi, Liao & Chen, 2018; Glenn et al., 2018).

Several Chinese Buddhist nuns’ /monks' works reveal that the major CVDs risk factors become worse as nuns age (Wu, Chen, Le, & Peng, 2013). This correlates with this DNP

student's observation and an informal survey among Vietnamese Buddhist nuns in the Seattle area. However, there is no previous formal literature research about Vietnamese-American Buddhist nuns' health knowledge, especially about CVDs. Also, there is no previous educational program about CVD's risk factors and prevention, for Vietnamese Buddhist nuns.

Therefore, this educational project aims to provide a good CVDs resource for Buddhist Nuns.

Additionally, by doing this project, the DNP student is hoping to raise general community awareness about the nuns' need of CVDs knowledge, health care utilities and prevention of CVDs for the improvement of general outcomes and quality of life of Vietnamese Buddhist nuns in the United States.

Problem Statement

The risk of cardiovascular diseases among the Buddhist Nuns population is indicated by an increasing rate of hypertension that results from low awareness of CVDs' risk factors and a low level of health care utilization. The purpose of this quality improvement educational project is to improve health knowledge of Vietnamese Buddhist nuns in the greater Seattle area by providing a community-based educational program with information about CVDs (hypertension, stroke, heart attack) signs and symptoms, risk factors, and possible prevention.

Organizational "Gap" Analysis of Project Site.

There is little specific research about Vietnamese Buddhist nuns' chronic disease prevalence nor any educational programs related to their general health knowledge or CVDs. This highlights the literature gaps and in practice that Vietnamese Buddhist Nuns are an unknown and under-served population. To address this disparity, this project will implement a culturally-sensitive, evidence-based educational program focusing on CVDs risk factors and prevention to the Vietnamese Buddhist nuns' population in the greater Seattle area.

Review of the Literature

The literature review aimed to collect information about CVD prevalence among Vietnamese Buddhist nuns and their level of knowledge and health care access in the United States and identify any previous educational programs that help improve health knowledge of CVDs in the Vietnamese Buddhist population. A structural approach was used to search for any available literature that provides information about CVDs and/or hypertension among the Vietnamese Buddhist nuns population as well as general knowledge about Buddhist teachings, and Buddhism.

The searches were conducted using Google Scholar and EBSCOhost search engines from the University of Massachusetts online library. Electronic databases included Cumulative Index to Nursing and Allied Health Literature [CINAHL], PubMed/Medline of the National Library of Medicine (NLM), Academic Search Premier, Science Citation Index, Science Direct, Social Sciences Citation Index, humanities international complete. Also, to find more sources, a manually searched was used by searching the reference list of retrieved published articles. Key words included: "*Vietnamese Buddhist nuns*," "*Vietnamese American immigrant*," "*Asian-American*," "*Buddhist nuns*", "*Buddhism*", "*Vietnamese American women*", "*Southeast Asia-American women*" combined with "*Cardiovascular disease*" "*hypertension*" "*healthcare*" "*health screening*", "*chronic health condition*" and "*intervention*" "*evidence-based intervention*", "*practice*", "*educational program*". Only complete studies and articles, which were published in English language between 1999 to 2019, were included.

The initial search using the above key terms generated 72 articles. Out of those, only 29 were academic journal articles published in the English language. Ten articles were eliminated

due to irrelevant subject matter and two articles were duplicates. There are a total of 17 articles that were then reviewed.

Generally, there was a significant lack of data on CVDs for the female Vietnamese population in English. Due to the limited resources, most of the articles discussed in this paper were mostly done on general Asian-American subgroups, or Vietnamese –American immigrant and/or Vietnamese American Women because those results will most likely reflect some general ideas for the Vietnamese Buddhist nuns' population.

The two themes that emerged from reviewing the literature included: (a) low awareness of CVDs knowledge of risk factors, prevention, and early screening; and (b) low health care utilization in the Vietnamese American community:

Low Awareness of Cardiovascular Disease risk factors, prevention, and early screening

Multiple sources acknowledge that Vietnamese Americans as the second-fastest-growing Asian subgroup in the U.S, and were noted to have a low level of awareness and significant disparities knowledge in risk factors and symptoms of cardiovascular disease (Pham, Rosenthal, & Diamond, 1999; Nguyen et al., 2009; Access and Utilization: Health Care Utilization Challenges, 2014; Do, Le, Kok, & Feskensm, 2015). Nguyen et al. (2009) conducted a population-based comparison study of adults aged 18 and older using telephone surveys of n=4,454 Vietnamese Americans in Santa Clara County, California, and non-Hispanic whites (n=19,324) in California. The authors found that many Vietnamese Americans are foreign-born, have limited English proficiency (which caused impaired physician-patient communication), low self-rated health, low level of physical activities, lack of knowledge about CVDs screening, and only 59% knew that one common symptom of heart attack was chest pain. The authors

concluded that a low level of knowledge of CVDs risk factors and symptoms is one of many significant disparities among Vietnamese Americans.

Another study by Duong, Bohannon, & Ross (2001) looked at 201 Vietnamese in a Gulf Coast community, focusing on HTN and its associated risk factors using 12 true/false questions on HTN knowledge. The study revealed that a low knowledge score was one of the most significant factors correlated with HTN. The authors concluded that health education knowledge related to CVDs was a significant need, which implied the serious lack of knowledge and awareness about CVDs in Vietnamese Americans (Duong, Bohannon, & Ross, 2001).

Low Health care utilization in the US Vietnamese community

Multiple sources confirm that low health care utilization in the Vietnamese community is one of several reasons, which will lead to an increase in mortality (Pham, Rosenthal, & Diamond, 1999; Iyer et al., 2019). A qualitative study that analyzed data collected from focus groups, family interviews and individual interviews of members and healthcare providers was conducted during 1996 and 1997 in the Philadelphia Vietnamese community. That study revealed low levels of use of health care services in the Vietnamese community due to many factors such as difficulties with language, insurance, financial, transportation, limited access to health information, and differences in cultural beliefs and practices (Pham, Rosenthal and Diamond, 1999). The low level of healthcare access/usage combined with the increasing incidence of hypertension and cardiovascular disease will accelerate the CVD morbidity and mortality among the Vietnamese community (Pham, Rosenthal, & Diamond; Nguyen et al., 2009; “Access and Utilization: Health Care Utilization Challenges, 2014; Do, Le, Kok, & Feskensm, 2015).

Similar findings were found in Iyer et al. (2019) 's comparison study between Asian-American subgroups and Caucasians. The authors conducted a study using the National Center for Health Statistics Multiple Causes of Death from the year 2003 to 2012. The study focused on examining the “years of potential life lost” due to ischemic heart disease and cerebrovascular disease among the 6 largest Asian-American subgroups (Asian-Indian, Chinese, Filipino, Korean, Japanese, and Vietnamese) in comparison with non-Hispanic whites. The results revealed that Vietnamese have the highest years of life lost because of cerebrovascular disease: Vietnamese men and women lost a mean of 17 and 16 years of life per 100,000 populations to cerebrovascular disease (Iyer et al., 2019)

Another study from Do, Le, Kok & Feskensm (2015), on n= 17,199 subjects aged from 25-64 years, also found that hypertension and prehypertension treatment, control, and awareness are low in Vietnamese Americans even though the disease's rate is high. The findings suggested that health access/utilities such as health education, detection, and treatment are important in the management of HTN and CVDs risk prevention in this population.

Another study used data from a household survey to examine CVDs prevention practices in Vietnamese- American women immigrants (n=1532), aged 20–79 years in Seattle, Washington (Coronado et al., 2008). This study results, collected in 2006 and 2007, found higher CVDs risk factors in Vietnamese American immigrant women who had less physical activity, less fruit and vegetable intake, and less frequency of blood pressure and cholesterol checks (Coronado et al., 2008). These findings confirm the need to develop and implement educational campaigns that promote access to healthcare services and increase cholesterol and blood pressure testing. Furthermore, the educational program will further help to reduce the burden of CVDs' complications among Vietnamese women by improving their knowledge

Evidence-Based Practice: Verification of Chosen Topic

The literature review supports the need for an educational intervention about CVDs risk factors that apply to the Buddhist nuns, particularly regarding diet and level of physical activities. Providing a culturally-sensitive evidence-based education program is a necessity and effective strategy to approach the Buddhist nuns' population to address their health problems and solve the health disparity. Education is an effective way to encourage individuals with any health problem, especially from at-risk populations, to interact with healthcare providers, seek care, and make better medical decisions. Thus, it will decrease health disparity.

The literature review supports the educational interventions to promote knowledge about CVDs risk factors, and early screening and prevention among Buddhist practitioners. The results of this educational project will further address the health care stereotypes about Buddhist practices and Buddhism, due to their different culture, practices, and beliefs. Buddhist nuns, who "live above their illnesses" by practicing meditation and vegetarianism, are generally being stereotyped as always in good health or being protected by a higher power and don't need health care access. Those stereotypes, generated by the society, that lacks cultural sensitivity actually create stronger barriers that cover up the lack of insurance, support network, English language, health knowledge, and their fears, shame, and poverty. This results in delays and barriers for Buddhist nuns to seek early care for their health problems.

An educational program that is culturally sensitive to Buddhist nuns will help improve their health knowledge, empower them to overcome stereotypes, and to seek out to care for their health. A community - based, culturally-sensitive intervention had proved to be most successful in improving knowledge and decreasing stereotype fears and shame to encourage individuals to seek help and make informed medical decisions.

Theoretical Framework

The Health Promotion Model (HPM) (see Appendix E) is a health-protective model that was proposed by Nola J Pender in 1982 and then revised in 1987, 1996, and 2002 (Galloway, 2003). Health Promotion Model promotes health behavior that is motivated by the desire to increase well-being and maximize individual health potential (Galloway, 2003). The Health Promotion Model was created based on the belief that each person has unique personal characteristics and experiences that affect subsequent actions. It focuses on the three areas: individual characteristics and experiences, behavior-specific cognitions and affect, and behavioral outcomes. Therefore, HPM is useful in investigating Vietnamese Buddhist nuns' unique personal characteristics and experiences to motivate the nuns to improve health, enhance functional ability, and better health quality of their life (Galloway, 2003).

The HPM is highly applicable in the community health setting. It influences health promotion and disease prevention by focusing on behavior motivation, a desire to increase well-being, and an approach to wellness. Health promotion is the process of enabling people to increase control over health and to improve their health (Galloway, 2003). It is a step up from primary prevention that applies to populations with risk factors but no signs/ symptoms appear yet. Since the HPM is focused on achieving higher levels of well-being and self-actualization (Galloway, 2003) in community health settings, it will most likely promote cognitive-perceptual factors and influence the nuns' health action.

According to the HPM, the nuns who carry their own unique individual experiences, characteristics (being a nun, shaving hair, live in a monastery...) and have their previous health protection behavior (praying, chanting, meditation...), will be more likely to seek information

and care for CVDs if she perceives benefits of the knowledge about CVDs will help her prevent heart attack and/or stroke (perceives benefits for the action). The Buddhist nuns will be more likely to overcome the fear and shame of having a formal health assessment if there is a perception of assistance, such as interpreters and culturally-sensitive providers. These perceptions will help nuns to feel stronger and more confident to seek for CVDs information and help.

Goals, Objective and Expected Outcomes

The goal of this educational research translation project, based on the “behavior-specific cognition and affect” component of Pender’s Health Promotion Model, is that Vietnamese Buddhist nun participants in this project will demonstrate an improvement in CVDs knowledge.

<i>Goal</i>	<i>Objective(s)</i>	<i>Outcome(s)</i>
<i>-The DNP student provided educational information to Buddhist nuns on the topic of CVDs risk factors, early prevention, and treatment during the period of time from of December 2020 to March 2021</i>	<i>- One 60 minutes’ phone interview and educational session scheduled with each nun (appointment- based) took place several Sunday from December 2020 to March 2021</i>	<i>Five Buddhist nuns attended the process of this CVDs education program. The individual education session was done using translated hand-out with information about Stroke, Heart attack and Hypertension.</i>

- Self-report survey

*was conducted before and
after the educational
section, using a culturally
tailored questionnaire
translated to Vietnamese
language to assess
Buddhist nuns' CVDs
knowledge.*

Methods

Project Site and Population

The project was implemented virtually via phone call at three Buddhist temples/monasteries in the greater Seattle area. The project size (n= 5) was due to the limited number of nuns available at each temple. There was no need for a facilitator to be involved in the process of setting up the meeting.

All the appointments were made privately with permission through conversation with each nun. The nuns who agreed to participate in the project agreed to sign the translated consent form in Vietnamese language (See appendix H) to indicate their participation and give their permission to assess their knowledge. A copy of the signed consent was given to the participants.

There was no need for an incentive to the nuns because of their vow to poverty. However, the DNP student has donated a small amount of money to contribute to the temple's long-term maintenance.

The setting barriers are arranging the right time to talk to the nuns because they are usually busy with many followers/ disciples and many other daily routine and temple's responsibilities. However, Sunday is still the best option to virtually implement the project because usually, Sunday is the day that nuns make available to serve the public, allowing better chances to call or talk to nuns.

The appointment took about 60 minutes. The phone was open the entire time to keep connections between the nun and the DNP student. The DNP student did answer all questions the nun had. The whole project intervention, including pre-intervention, intervention and post-intervention, was conducted via the phone.

Pre-intervention session: The pre-intervention session was conducted via phone call. First, the DNP student had a short self-re-introduction of a professional role as a DNP student and re-introduced this project's purpose as a requirement for the graduated DNP program. The DNP student took time to go over the informed consent information with the nun again to make sure she understood the whole process and understood her role. To reduce the test-taking anxiety, the DNP student explained that the pre-assessment and post-assessment results are used to discuss and provide appropriate educational information only. Those test results are not used for anything else, such as making any other general knowledge assumptions. The DNP student took the time to answer all questions from the nuns. The pre-intervention session took about 10 minutes.

Intervention: The educational intervention took about 40 minutes on the phone. The pre-assessment took about 10 minutes; on the phone conversation, the DNP student briefed the nuns' questions from the pre-assessment questionnaire. The nuns filled up the questionnaire paper by themselves. The DNP student asked the nuns to put the completed questionnaire in the envelope and seal them later. In the next 30 minutes, the DNP student went over all the important information about Cardiovascular disease - CVDs, including HTN, Stroke, and Heart Attack, according to all the materials that the student had delivered to the nun before the phone appointment.

Post-intervention: The post-assessment test took about 10 minutes on the phone; the DNP student brief the questions from the post-assessment questionnaire to the nuns. The nuns filled up the post-questionnaire paper by themselves. The DNP student asked the nuns to put the completed questionnaires in the envelope and seal them for the DNP student to come to the temple to collect all the completed questionnaires in the envelope. The DNP student gave the nuns enough time to ask questions, and the DNP student answered all the nun's questions related to the questionnaires and the whole project. Finally, the DNP student thanked the nuns for their time and participation in this project.

Measurement Instruments

A 20 item questionnaire for Buddhist Nuns [BN-pre and post-intervention questionnaire questionnaire] was used to measure the outcomes of this DNP project (see Appendix B, C). The BN pre-and post-intervention, self-administered questionnaire was created to determine the Buddhist nuns' general knowledge and risk factors, their self-perception and behavior change about CVDs. The pre-and post-intervention questionnaires were developed by the DNP student, based upon the ideas of "85-item questionnaire" from the National Health Service (NHS) Health

Check in which to examine the participants' views of their risk of CVDs (see Appendix A). Modifications were made, as necessary so that the questionnaires are simple to understand and answer and provide accurate and culturally sensitive information to the participants. The pre-educational questionnaires were focused on determining Vietnamese Buddhist nuns' knowledge about CVDs diseases and risk factors. The post-educational questions will focus on assessing their readiness to apply the knowledge.

From the NHS's original 85 questions, 60 questions were dropped to make a shorter version to avoid wordiness, save the participants' time, and reduce confusion. Most of the wording was changed to be more culturally appropriate to the Vietnamese population, especially Vietnamese Buddhist nuns. Furthermore, all the questions with "false" answers (or false knowledge) are eliminated, only questions that imply facts and carry affirmative knowledge are kept, to emphasize the facts and avoid confusion. Additionally, there are five questions, items 1-5 in the pretest to assess general CVDs' knowledge, which were added to the BN-pre and post-intervention questionnaire to assess the nun's knowledge about CVDs diseases, their signs/symptoms, and dietary risk factor.

The pre-educational and post-educational questionnaires were translated into the Vietnamese language with strong consideration of cultural sensitivity. The accuracy and culturally implied meaning of the translated questionnaires were checked with knowledgeable healthcare providers who were born, grew up, had practiced medicine in Vietnamese, and speak fluent both Vietnamese and English.

All health materials included in the education intervention section, given to the nuns, were in English and Vietnamese (See Appendix D). Those translated materials were retrieved

from a reliable, open-source the “Network of the National Library of Medicine” [NIH] – Consumer Health Information in Many Languages Resources and MedlinePlus.

Data Collection Procedures

Private virtual appointments via phone call with five nuns were formally scheduled during December 2020 to March 2021. After the nuns agreed to participate in the project, the DNP student delivered the translated informed consent to the temple a couple of weeks before the phone interview so that the nuns have enough time to review and sign. There was no demographic information collected and the consent forms were anonymous. The DNP student came back to the temple to collect the consent and delivered the education material and the tests. Data was collected by questionnaires created by the DNP student with a culturally appropriate Vietnamese language. All the information related to the project, including the informed consent, the pre-intervention questionnaire and post-intervention questionnaire, and the educational material (pamphlet) were delivered (no-contact drop-off) to the temples before the phone appointment for the nuns to have all education material available during the virtual education section. During the phone call section, the DNP student briefed the informed consent and the pre-intervention questionnaire, the nuns, filled up the pre-intervention questionnaire. The DNP student asked the nuns to put the completed questionnaire in the envelope and seal them later. Then, in the intervention section, the DNP student talked about CVDs, including Hypertension, Stroke and Heart Attack, according to all materials that have already been given to the nuns. After the intervention section, the nuns took the post-intervention questionnaire to assess their improvement in CVDs’ knowledge and readiness to practice a healthy lifestyle and healthy behaviors. The DNP student briefed the post-intervention questionnaire, and the nuns filled up the pre-intervention questionnaire by themselves. The DNP student asked the nuns to put the

completed questionnaire in the envelope and seal them at last. Then the DNP student asked the nuns if they have any questions that she responds, “don’t know”, and the DNP student discussed with the nun about those questions. The DNP student encouraged all questions and was available to answer all the nuns’ questions during the whole encounter from beginning to end. The nun's whole appointment for this educational project was about 60 minutes’ continuous connection on the phone. The nuns concerned about CVDs or not have an annual checkup were reminded and referred to the local medical clinic for further assessment and treatment. The DNP student came to the temple to collect all the completed questionnaires in the envelope after the phone intervention.

Data Analysis

The data were analyzed using descriptive statistics using Excel spreadsheets to compile the findings. The BN-pre and post-intervention questionnaires consisted of 20 items with “true/false/ don’t know” responses. The individual pre-educational and post-educational test results were calculated quantitatively and presented as percentages. The difference in percentages between pre- educational and post-educational tests demonstrates the change in knowledge and is used as a measurement if the goals are met.

Ethical Considerations/ Protection of Human Subjects

The IRB approval was obtained before initiating the DNP project. Informed consent and HIPAA information were given to the nuns before the education section. All participants were protected by the Health Insurance Portability and Accountability Act of 1996 (HIPAA). The DNP student carefully conducted this project following the Standard of Care for practice in a community setting. All information collected as part of evaluating the impact of this project pertained to aggregate data and did not include any potential personal identifiers.

The risk to participants in this project is no different from the risks of any other project participant. The nuns' confidentiality is assured by coding the participant using individual identification numbers. The list of participants and their identifying numbers was kept private and only accessible to the DNP student. All electronic files containing identifiable information were password-protected to prevent unauthorized users.

Cost-Benefit Analysis/ Budget

This project had a very minimal cost while the benefits outweigh the cost. The cost mostly included the time used, supplies, and a small donation to assist with the long-term temple's maintenance cost (See Appendix F). The implementation was done with phone calls and pre / post-intervention questionnaire evaluations with five Vietnamese Buddhist nuns at the local temples. The project was implemented on several Sundays from December 2020 to March 2021, when the nuns are most available to the public and after they finish talking to their disciples.

Timeline

This project began in December 2020 and concluded in March of 2021 to ensure enough time for the implementation, data collection, analysis, and conclusion.

Results

There were five Vietnamese Buddhist nuns who agreed to participate in this project. Four of the five nuns are in the age range from 48-year-old to 58-year-old and one nun is in her early 70's. One nun has been ordained since she was 16-year-old and has the highest level of Buddhist education and the longest Buddhist practicing. All the other nuns have vowed to become nuns for at least 15 years. All nuns have at least high-school graduate degree, one of the nun has an

associate degree. One of nun have graduated high school in the United States. Three of the nuns immigrated to the United States since the early 90's. One nun came to the U.S in early 2000's and the other nun were immigrant to the U.S for about 5 years. Four of the nuns are in normal weight range, and one of them slightly overweight.

The descriptive analysis indicated that the proportion of participants who had correct general knowledge on CVDs improved from 64% at pre-test to 92% at post-test (*Figure 1*). The overall increasing of 28% of participants with a correct knowledge between the pre-test and post-test education showed an improvement in CVDs knowledge. Therefore, the goal for improving CVDs' knowledge among Vietnamese Buddhist nuns in the Seattle greater area was met.

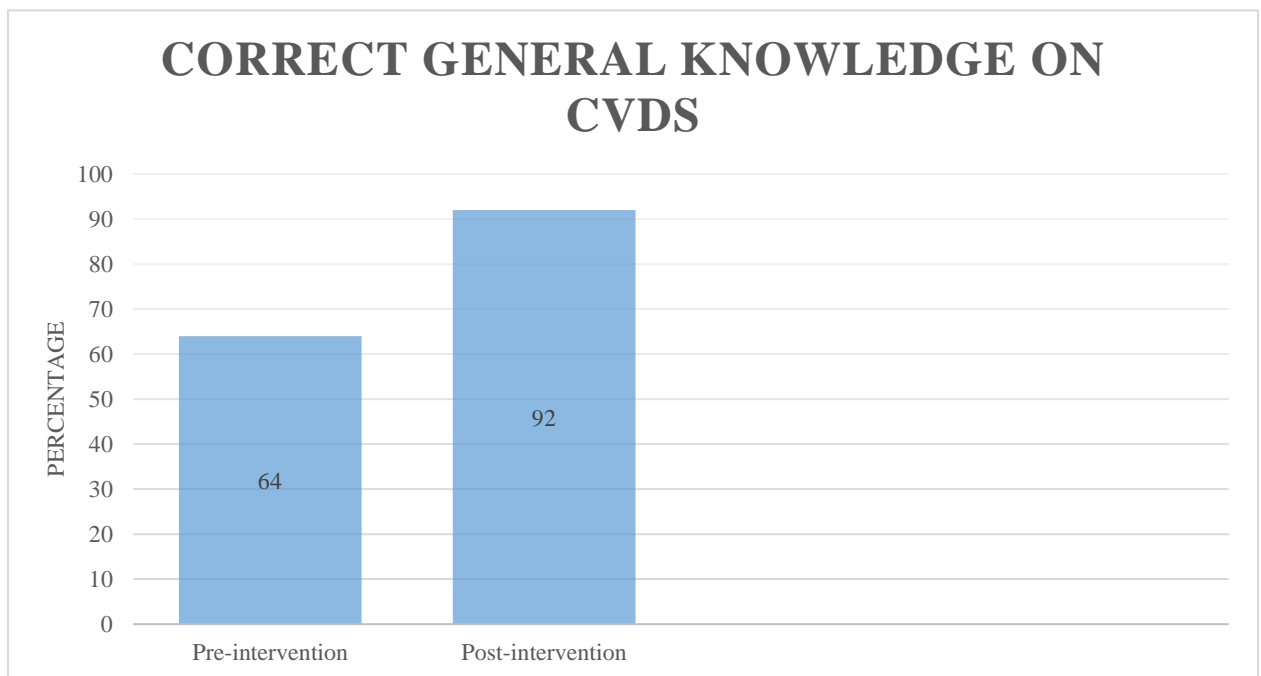


Figure 1. Bar Graph illustrating the percentage for the correct responses on general knowledge about CVDs.

Figure 2 shows correct responses on CVDs knowledge by five different categories. There is a 40% improvement in the correct responses regarding knowledge of signs/ symptoms of CVDs, with 60% at pre-intervention to 100% post-intervention. The participants with a correct knowledge of salt consumption increased in percentage of (20%) from 80% at pre-intervention to 100% post-intervention (*Figure 2*). Knowledge about the relation between stress level and CVDs result was 60% at pre-intervention; this may have suggested that the nuns pay less attention to the stress level of their life. However, the post-intervention knowledge of stress relation had increased to 80% showed their improvement of knowledge of stress related to CVDs (*Figure 2*). Finally, regarding the knowledge of correlation between family history and CVDs, the 20% increase (40% vs. 60%) suggested that the information delivered positively affected knowledge even though the nuns initially had the least correct answers in this aspect.

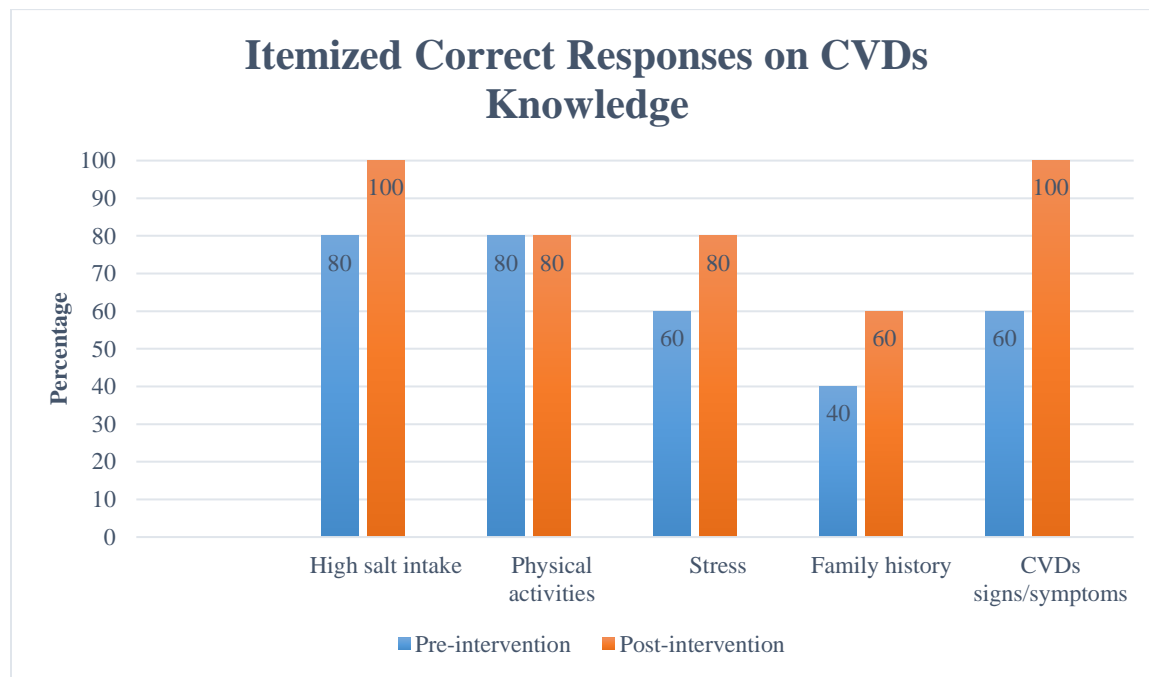


Figure 2. Bar graph illustrating the percentage of itemized correct responses on CVDs knowledge.

Discussion

The results of this project was as expected and has shown some positive signs in the improvement of knowledge about CVDs among Vietnamese Buddhist nuns. According to the Pender's Health Promotion, the nuns are more likely to seek for knowledge or information, screening and care for cardiovascular disease (including hypertension, stroke and heart attack) if they perceive the benefit from the information and take action to show their readiness. The 28% improvement of general knowledge of CVDs from pre to post-intervention suggest that the Vietnamese Buddhist nuns who participated in this project were open for opportunities to learn more about CVDs.

In this project, the pre-intervention responses about CVDs signs and symptoms results with 60% show that nuns might have somewhat better knowledge of CVDs compared to the results from Nguyen et al. (2009) study. The post-intervention test resulted with a 100% correct response about CVDs showed that all nuns had gained the knowledge that hypertension, heart attack and stroke are common sign/symptoms for cardiovascular disease. All participant nuns have better level of basic knowledge of CVDs as shown in the increment of 20% in the correct knowledge on salt intake, stress and family history risk factor related to CVDs. However, only 20% of the nuns responded correctly that difficult breathing and chest pain radiating to the arm are common signs of heart attack and 40% correct answers about hypertension usually has no obvious signs/symptoms suggested, in line with the study of n= 19,324 Vietnamese Americans in Santa Clara County, California, that only 59% of the participants knew that chest pain is a common symptom of heart attack (Nguyen et al., 2009).

The low percentage on the pre-intervention score on the relationship between CVDs and family history (40%) may also reflect seriously lack of knowledge and awareness of CVDs among Vietnamese Americans, which was reported by Nguyen et al. (2009) and Duong, Bohannon, & Ross (2001). In this project, the low pre-intervention score about CVDs signs/symptoms also suggest a significant disparity in Vietnamese immigrants, who live in America, which can be improved with more community-based educational program to provide more information and knowledge related to CVDs. Fortunately, the post-intervention scores for the general knowledge and non-modifiable risk factor were all improved, showing the improvement in the nuns' awareness about CVDs. Therefore, the goal of this project was met.

The pre-intervention scores from this educational project showed that 80% of nuns are aware that high salt intake and low physical activities are both highly related to CVDs. The post-intervention scores were improved to 100% for high salt intake diet and all the nuns showed the readiness to change their salt intake diet. However, for the physical activities, the post-intervention showed no improvement response (80%) compared with the pre-intervention responses that bring up a concern about the level of physical activities among nuns. This finding were supported by the study of Coronado et al.,2008 that there is a higher rate for CVDs related deaths (31%) among Vietnamese American immigrant women who had less physical activity. Advantageously, at post-intervention, all of nuns responded yes (100%) to the questions about their readiness to control their weight partly implying the willingness of increasing physical activities level.

Stress also has long been considered as an important risk factor for hypertension and cardiovascular diseases (Mucci et al., 2016). The pre-intervention score of only 60% of nuns, in this project, knowing about the relation between stress and CVDs could be explained as the nuns

had experienced less daily-stress related factors than other populations. Furthermore, the nuns perhaps paid less attention on their physical life stress because they focus more on the mental/spiritual aspect of their life as part of practicing Buddhist teaching. Favorably, the post-intervention scores were improved to 80% for stress-related CVDs questions that proved the effectiveness of this educational project and the project's goal met.

One of the most significant barriers of this project were the small number participants from the Seattle greater were included in this project. Compared to other bigger states (California, Texas...), Seattle has significantly less numbers of Vietnamese Buddhist temples, which means considerably less of the number of nuns available for this project. Furthermore, due to COVID-19 pandemic, it was much more challenging to recruit enough participants that resulted in only five nuns consenting for the project compared to the plan of recruit up to 7-10 nuns. Alternatively, this project could have focused on all Buddhist nuns, including Buddhist nuns from other ethnicities, or all Buddhist nuns in the U.S including nuns from other states. Then, this project's result might be generalizable to all multi-ethnic Buddhist Nuns living in the US as opposed to only a small group of participants in this project.

Conclusion

Asians are among the fastest-growing racial/ethnic populations in the United States. Cardiovascular disease is a leading cause of death in the United States and many countries worldwide, including Vietnam. There is limited research on Asian Americans, especially in Vietnamese Americans. Additional research is needed to address health disparities in this population in general and Vietnamese Buddhist nuns. HTN is a silent killer. It can significantly

reduce life expectancy due to heart disease and strokes and pose a disastrous financial burden to our society.

The information from this quality improvement, community educational project contributed to the general understanding about Buddhist nun's knowledge about CVDs and the nuns' attitude toward utilizing the healthcare system. This project finding would be helpful to design with a culturally sensitive approach to promote prevention, diagnosis, and treatment to reduce CVD's burden and morbidity rates among Vietnamese Buddhist nuns.

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Appendix A

85 Item Questionnaire

Original CVDs awareness from the National Health Service (NHS) Health Check

Subscale	Items	Answers
Knowledge of CVD Risk and Prevention	1. Eating a lot of red meat increases heart attack and stroke risk.	True, False, Don't Know
	2. Most people can tell whether or not they have high blood pressure.	T=True F=False
Prevention	3. You can reduce your risk of heart attack or stroke by being physically active.	Correct
	4. 'High' blood pressure is defined as 110/80 (systolic/diastolic) or higher.	Answers Q1=T Q2=F Q3=T
	5. Dietary fiber lowers blood cholesterol.	Q4=F Q5=T
	6. The most important cause of heart attack and stroke is stress.	Q6=F Q7=F Q8=T
	7. Trans-fats are healthier for the heart than most other kinds of fats.	Q9=T Q10=T Q11=F
	8. Walking and gardening are considered types of exercise that can lower the risk of having a heart attack or stroke.	Q12=T Q13=T Q14=T Q15=T Q16=F Q17=T
	9. You can reduce your chance of developing a heart attack or stroke by eating a five-a-day diet of fruits and vegetables.	Q18=F

	10. Moderate physical activity of 150 minutes a week will reduce your chances of developing a heart attack or stroke.	
	11. People who quit smoking by 60 add five years to their life.	
	12. People who have diabetes are at higher risk having a heart attack or stroke.	
	13. Managing your stress levels will help you to manage your blood pressure.	
	14. HDL refers to ‘good’ cholesterol, and LDL refers to ‘bad’ cholesterol.	
	15. The healthiest exercise for the heart involves rapid breathing for a sustained period of time.	
	16. Many vegetables are high in cholesterol.	
	17. You are more likely to have a heart attack or stroke if you’re overweight or obese.	
	18. Drinking alcohol has nothing to do with reducing the risk of heart attack or stroke.	
Perceived Risk and Vulnerability of CVD	19. There is a possibility that I will have a heart attack or stroke.	1 = Strongly disagree; 2 = disagree; 3 = agree; 4 = strongly agree
	20. There is a good chance I will experience a heart attack or stroke during the next 10 years.	
	21. A person who gets a heart attack or stroke has no chance of recovering.	

22. I have a high chance of getting a heart attack or stroke because of my past behaviors.

23. I feel sure that I will have a heart attack or stroke.

24. Healthy lifestyle habits are unattainable.

25. It is likely that I will get a heart attack or stroke.

26. I am at risk for having a heart attack or stroke.

27. It is possible that I will have a heart attack or stroke.

28. I am not doing anything now that is unhealthy to my heart.

29. I am too young to have a heart attack or stroke.

30. People like me do not get a heart attack or stroke.

31. I am very healthy so I will not have a heart attack or stroke.

32. I am not worried that I might have a heart attack or stroke.

33. People my age are too young to have a heart attack or stroke.

34. People my age do not have a heart attack or stroke.

35. My lifestyle habits do not put me at risk for having a heart attack or stroke.

36. No matter what I do, if I am going to have a heart attack or stroke, I will have one.

	37. People who do not have a heart attack or stroke are just plain lucky.
	38. The causes of a heart attack or stroke are unknown.
Perceived Susceptibility	39. It is likely that I will suffer from a heart attack or stroke in the future.
	40. My chances of suffering from a heart attack or stroke in the next few years are great.
	41. Having a heart attack or stroke is currently a possibility for me.
	42. I feel I will suffer from a heart attack or stroke sometime during my life.
	43. I am concerned about the likelihood of having a heart attack or stroke in the near future.
Perceived Severity	44. Heart attacks and strokes are always fatal.
	45. Having a heart attack or stroke will threaten my relationship with my significant other.
	46. My whole life would change if I had a heart attack or stroke.
	47. Having a heart attack or stroke would have a very bad effect on my sex life.
	48. If I have a heart attack or stroke I will die within 10 years.

Perceived Benefits	49. Increasing my exercise will decrease my chances of having a heart attack or stroke.
	50. Eating a healthy diet will decrease my chance of having a heart attack or stroke.
	51. Stopping smoking will reduce my chance of having a heart attack or stroke.
	52. When I exercise I am doing something good for myself.
	53. When I eat healthy I am doing something good for myself.
Perceived Barriers	54. Cutting down on alcohol will decrease my chances of having a heart attack or stroke.
	55. I do not know appropriate <u>exercises</u> to perform to reduce my risk of developing cardiovascular disease.
	56. I do not know the recommended drinking limits for men or women.
	57. I do not have time to <u>exercise</u> for 30 minutes a day on most days of the week.
	58. I do not know what is considered a <u>healthy diet</u> that would prevent me from developing cardiovascular disease.
	59. I will not have energy if I stop smoking.
	60. I cannot afford to <u>buy healthy foods</u> .
	61. I have other problems more important than worrying about diet and exercise.

Self-Efficacy	62. How confident are you that you know or can control the risks of having a heart attack or stroke?	1= not at all confident,
	63. How confident are you that you know or can maintain a healthy weight by exercising regularly?	2=somewhat confident, 3=
	64. How confident are you that you know or can stop smoking if you want to?	moderately confident,
	65. How confident are you that you know or can consume less alcohol?	4=very confident,
	66. How confident are you that you know or can control your blood pressure and/or cholesterol levels by taking your prescribed medications?	5=completely confident
	67. How confident are you that you know or can eat a healthy and balanced diet?	
Intention to Change Behavior or Cues to Action	68. I want to stop smoking (if you do smoke).	1 =
	69. I intend to maintain a healthy weight.	Strongly disagree; 2 =
	70. I intend to be physically active within two months.	disagree; 3 =
	71. I expect to maintain a healthy weight.	disagree; 3 =
	72. I want to be physically active.	agree; 4 =
	73. I intend to eat a healthy and balanced diet within two months.	strongly agree
	74. I expect to stop smoking (if you do smoke).	
	75. I want to cut down on alcohol.	

76. I want to maintain a healthy and balanced diet.

77. I intend to stop smoking within two months (if you do smoke).

78. I expect to eat a healthy and balanced diet.

79. I intend to cut down on alcohol in the next two months.

80. I expect to be physically active.

81. I expect to cut down on alcohol.

82. I want to eat a healthy and balanced diet.

83. I expect to take my medication to control my blood pressure and/or cholesterol

84. I want to take my medication to control my blood pressure and/or cholesterol

85. I intend to take my medication to control my blood pressure and/or cholesterol within two months

Appendix B

The CVDs Awareness Questionnaire to Assess Vietnamese Buddhist Nuns' knowledge of

Cardiovascular disease

[BN pre and post intervention questionnaire]

QUESTIONS

RESPONSE

YES / NO / DON'T KNOW

To Assess General knowledge about CVDs

1. Hypertension, Heart attack and Stroke are common cardiovascular disease
2. Difficult breathing and chest pain radiates to the arm are the common signs of heart attack
3. Hypertension usually has no obvious signs or symptoms
4. High salt diet is a risk factor of hypertension and CVDs
5. Physical inactivity is a risk factor of hypertension and CVDs
6. High stress level might cause hypertension, heart attack and stroke
7. Hypertension and diabetes increase the risk of heart attack and stroke
8. Overweight or obesity increase the risk of heart attack and stroke
9. Family history contributes to the of hypertension and CVDs
10. Low salt diet, more fiber and moderate physical activities , about 2 ½ hrs. a week , will help decrease hypertension , heart attack and stroke

To Assess Self-perceived about CVDs

1. I feel sure that I will have a heart attack or stroke.
2. I am worried that I might have a heart attack or stroke
3. I am not worried that I might have a heart attack or stroke

4. I am very healthy so I will not have a heart attack or stroke.
5. My lifestyle habits do not put me at risk for having a heart attack or stroke.

To Assess the readiness to change behavior about CVDs

1. I am not confident about my English skills, I cannot go to see health care provider
2. I cannot afford to buy healthy foods.
3. I am ready or started to eat less sodium, more fruit and vegetables every day
4. I am ready or started to manage my weight
5. I am ready or started to exercise 30 minutes a day or 2 ½ hrs. every week

Appendix C

Translated- Vietnamese language version of BN pre and post intervention questionnaire

Bảng câu hỏi Để kiểm tra kiến thức về bệnh tim mạch của Ni giới Phật tử Việt Nam

Câu hỏi TRƯỚC / SAU KHI HỌC

câu trả lời

đúng / sai / không

biết

Để kiểm tra kiến thức chung về CVD

1. Tăng huyết áp, đau tim và đột quy là những bệnh tim mạch phổ biến
2. Khó thở và đau ngực lan ra cánh tay là những dấu hiệu phổ biến của đau tim
3. Tăng huyết áp thường không có dấu hiệu hoặc triệu chứng rõ ràng
4. Chế độ ăn nhiều muối là yếu tố nguy cơ của tăng huyết áp và CVD
5. Không hoạt động thể chất là một yếu tố nguy cơ của tăng huyết áp và CVD
6. Mức độ căng thẳng cao có thể gây tăng huyết áp, đau tim và đột quy
7. Tăng huyết áp và tiểu đường làm tăng nguy cơ đau tim và đột quy
8. Thừa cân hoặc béo phì làm tăng nguy cơ đau tim và đột quy
9. Lịch sử gia đình về bệnh tim mạch là một yếu tố nguy cơ của tăng huyết áp và CVD
10. Chế độ ăn ít muối, nhiều chất xơ và các hoạt động thể chất vừa phải, khoảng 2 tiếng rưỡi mỗi tuần, sẽ giúp giảm huyết áp, đau tim và đột quy

Để kiểm tra sự tự nhận thức về CVD

1. Tôi cảm thấy chắc chắn rằng mình sẽ bị đau tim hoặc đột quy.
2. Tôi lo lắng rằng tôi có thể bị đau tim hoặc đột quy

3. Tôi không lo lắng rằng tôi có thể bị đau tim hoặc đột quỵ
4. Tôi rất khỏe mạnh nên tôi sẽ không bị đau tim hay đột quỵ.
5. Thói quen sinh hoạt của tôi khiến tôi không có nguy cơ bị đau tim hoặc đột quỵ.

Để kiểm tra sự sẵn sàng thay đổi hành vi về CVD

1. Tôi không tự tin về kỹ năng tiếng Anh của mình, tôi không thể đến gặp nhà cung cấp dịch vụ chăm sóc sức khỏe
2. Tôi không đủ khả năng để mua thực phẩm lành mạnh.
3. Tôi đã sẵn sàng hoặc bắt đầu ăn ít natri, nhiều trái cây và rau quả mỗi ngày
4. Tôi đã sẵn sàng hoặc bắt đầu kiểm soát cân nặng của mình
5. Tôi sẵn sàng hoặc bắt đầu tập thể dục 30 phút mỗi ngày hoặc 2 tiếng rưỡi mỗi tuần

Appendix D

Translated Health Information Materials Hand-out (stroke, heart attack, hypertension)

Đột Quy

Stroke

A stroke occurs when the blood flow to the brain is decreased or stopped. The blood flow can be blocked from a blood clot, plaque or a leak in a blood vessel. Sometimes the blood flow to the brain is blocked for a brief time.

If you have signs of a stroke, but the signs go away in minutes to hours this is called a TIA or transient ischemic attack or “mini stroke”. This is a strong warning that there is a problem and a stroke could occur in the future.

When the blood flow to the brain is blocked causing permanent damage, it is called a stroke. Tests can be done to find the type, location and cause of the blockage to the blood flow of the brain.

Signs

The effects of a stroke depend on the location and amount of damage to the brain.

Signs are sudden and may include:

- Numbness, tingling or weakness in the face, arm or leg, often only on one side of the body
- Confusion or trouble understanding
- Problems speaking
- Problems seeing out of one or both eyes
- Dizziness or trouble with balance, coordination or walking
- Sudden severe headache with no known cause

Đột quy xảy ra khi dòng máu lên não bị giảm bớt hoặc bị tắc nghẽn. Dòng máu có thể bị tắc do máu bị đông cục, tạo thành

màng hoặc do mạch máu bị rò rỉ. Đôi khi dòng máu lên não bị tắc nghẽn trong một thời gian ngắn.

Nếu có dấu hiệu bị đột quy, nhưng các dấu hiệu này biến mất trong vài phút cho tới vài giờ, hiện tượng này gọi là TIA hay “transient ischemic attack” (con thiếu máu cục bộ trong thời gian ngắn) hoặc “tiểu đột quy”. Đây là dấu hiệu cảnh báo rằng chắc chắn đã có vấn đề và đột quy có thể xảy ra trong tương lai.

Khi dòng máu lên não bị tắc nghẽn, gây tổn thương vĩnh viễn, hiện tượng đó gọi là đột quy. Người ta có thể tiến hành các thủ tục khám nghiệm để xác định dạng, địa điểm và nguyên nhân gây tắc nghẽn dòng máu lên não.

Các Dấu Hiệu

Các ảnh hưởng của đột quy tùy thuộc vào địa điểm và mức độ tổn thương đối với não. Các dấu hiệu thường xảy ra bất ngờ và có thể bao gồm:

- Tê cứng, ngứa ran hoặc suy nhược ở vùng mặt, tay hoặc chân, thường chỉ ở một bên cơ thể
- Lú lẫn hoặc khó hiểu
- Có các vấn đề về phát ngôn
- Gặp vấn đề khi nhìn bằng một hoặc cả hai mắt
- Chóng mặt hoặc khó giữ thăng bằng, khó phối hợp cử động hoặc đi lại
- Bỗng nhiên bị đau đầu dữ dội mà không biết nguyên nhân

Your Care

Call 911 as soon as you have any signs of a stroke. The goal of care is to stop further damage to the brain. It is important to get to the hospital right away.

Sometimes it takes a few days to see what type of damage has occurred. It is hard to predict how you will recover from a stroke. Care is planned based on

your needs. It may include:

- Therapy for rehabilitation

- Exercise to strengthen your muscles
- Adapting your activity to use the strong side of your body
- Learning how to talk and communicate
- Learning ways to eat and drink safely

Risk Factors

You are at risk for a stroke if you:

- Have high blood pressure, diabetes, high blood cholesterol, heart disease or a prior stroke
- Are from a family where others have had a stroke
- Are overweight
- Are inactive or do not exercise
- Have a lot of stress
- Eat foods high in cholesterol and fat

- Smoke or use tobacco
- Drink too much alcohol

Việc Chăm Sóc Chữa Trị của Quý Vị

Gọi ngay 911 khi quý vị có bất kỳ dấu hiệu đột quỵ nào. Mục tiêu của việc chăm sóc chữa trị là ngăn làm cho não bị tổn thương thêm. Điều quan trọng là tới bệnh viện ngay.

Đôi khi phải mất vài ngày mới biết được là đã xảy ra dạng tổn thương nào. Khả năng phục hồi của quý vị sau khi đột quỵ rất khó dự đoán. Việc chăm sóc chữa trị sẽ được sắp xếp dựa trên các nhu cầu của quý vị. Việc đó có thể bao gồm:

- Trị liệu phục hồi
- Tập thể dục để làm tăng sinh lực cho cơ bắp
- Điều chỉnh hoạt động để sử dụng phía bên người còn khỏe
- Tập cách nói chuyện và giao tiếp
- Tập cách ăn uống an toàn

Các Yếu Tố Có Nguy Cơ Gây Bệnh

Quý vị có nguy cơ mắc bệnh đột quỵ nếu quý vị:

- Mắc bệnh huyết áp cao, tiểu đường, mức cholesterol trong máu cao, bệnh tim hoặc trước đó đã từng bị đột quỵ
- Có người thân trong gia đình đã từng mắc bệnh đột quỵ
- Quá mập
- Không vận động hoặc không tập thể dục
- Tinh thần rất căng thẳng
- Ăn các loại thực phẩm có nhiều cholesterol và chất béo
- Hút thuốc hoặc dùng các sản phẩm thuốc lá
- Uống quá nhiều đồ uống có cồn

3

- Use street drugs
- Have a head injury or a bleeding disorder

If you have any of these risk factors, talk to your doctor or nurse about ways to manage them.

To Prevent a Stroke

- Treat high blood pressure, diabetes, high cholesterol and heart disease if present
- Quit smoking
- Exercise
- Eat a healthy diet and lose weight if you are overweight
- Limit alcohol to 1 to 2 drinks a day
- Avoid falls and injuries

Talk to your doctor or nurse if you have any questions or concerns.

- Dùng các loại ma túy bất hợp pháp
- Bị thương ở đầu hoặc bệnh liên quan tới chảy máu

Nếu quý vị có bất kỳ yếu tố nguy cơ nào trong số này, hãy nói chuyện với bác sĩ hoặc y tá để tìm cách kiểm soát các yếu tố đó.

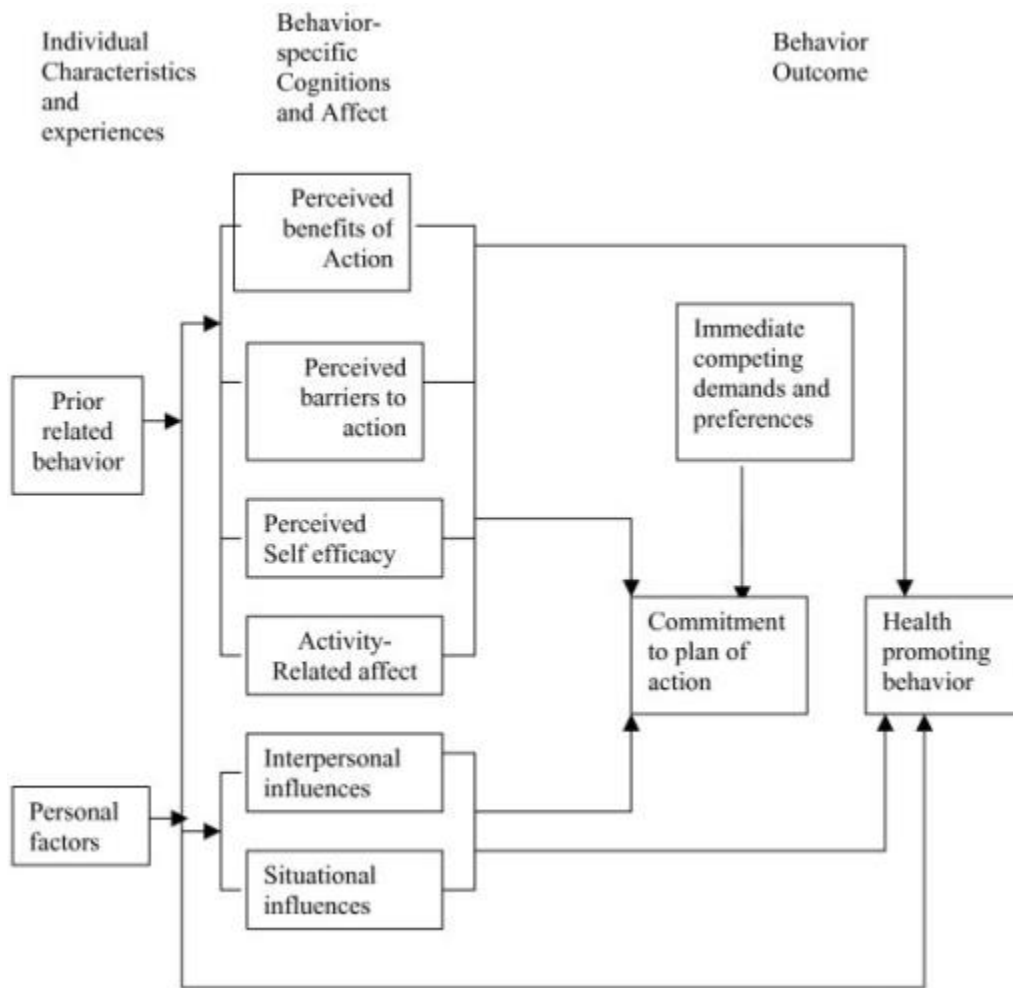
Để Ngăn Ngừa Đột Quy

- Chữa các bệnh huyết áp cao, tiểu đường, cholesterol cao và bệnh tim, nếu có
- Cai thuốc lá
- Tập thể dục
- Ăn uống lành mạnh và giảm cân nếu quý vị quá mập
- Hạn chế dùng đồ uống có cồn từ 1 tới 2 ly một ngày
- Tránh té ngã và thương tích

Hãy nói chuyện với bác sĩ hoặc y tá nếu quý vị có thắc mắc hoặc vấn đề lo ngại.

Appendix E

Health Promotion Model



Appendix F
Cost –Benefits Analysis

ITEMS	COST
10 copies of Pre-educational and Post-educational questionnaire (20 pages)	20x 0.10 = \$2
15 copies of informed consents (10 pages) (extra copies to be given to the nuns if they requests)	15 x 0.10 = \$1.5
Translated health information handout to be given to the nuns as an supplemental educational materials including information about HTN, Stroke, Heart Attack (3 pages each x 3x 10 = 90 pages)	90 x 0.10 = \$9
Consider donation to each temple 's free meals and lunch program	\$ 100 x 3 temple = \$300
Other supplies: pens/ pencils	Free
Use of space for the educational section	Free
Time for the education section	Free

Appendix G

Inform Consent (in English)

Consent Form for Participation in a Research Study

University of Massachusetts Amherst

Researcher(s): Uyen Nguyen; Kalpana Poudel-Tandukar, Ph.D., MPH, MPHIC, CGM ,

Study Title: A Community Based Education on Cardiovascular Disease among Vietnamese Buddhist Nuns

1. what is this form?

This form is called a Consent Form. It will give you information about the study so you can make an informed decision about participation in this project. We encourage you to take some time to think this over and ask questions now and at any other time. If you decide to participate, you will be asked to sign this form and you will be given a copy for your records.

2. What are some of the important aspects of this RESEARCH study that I should be aware of?

The participation in this project is voluntary. This is a Community- Based Project in which we implement a culturally tailored health education program on cardiovascular disease, virtually via phone. The purpose of this research study is to improve knowledge of cardiovascular health among Vietnamese Buddhist nuns in the greater Seattle area

There are no known risks associated with this research study; however, a possible inconvenience may be the time it takes to complete the survey and possible discomfort for the time to stay on the phone about an hour.

By participate in this project, nuns will have opportunities to reinforce themselves with the knowledge about CVDs that they already have and/or supplement any missing facts.

3. WHY ARE WE DOING THIS RESEARCH STUDY?

This project is part of Uyen Nguyen's capstone project for her Doctoral Degree from the University of Massachusetts in Amherst

4. WHO CAN PARTICIPATE IN THIS RESEARCH STUDY?

Participants are Vietnamese Buddhist Nuns who must be at least 18 years' old. The project will be conducted with each nun individually via phone calls

5. WHERE WILL THIS RESEARCH STUDY TAKE PLACE AND HOW MANY PEOPLE WILL PARTICIPATE?

The project will be conducted with each nun individually via phone call.

6. WHAT WILL I BE ASKED TO DO AND HOW MUCH TIME WILL IT TAKE?

If you agree to take part in this study, you will be asked to participation in one section of 60 minutes on the phone including a 10 minutes introduction and review inform consent, 10 minutes pre-assessment, a 30 minutes educational section, 5 minutes post-assessment, and 5 minutes questions & answers and conclusion of the meeting. You may skip any question you feel uncomfortable answering

7. WILL BEING IN THIS RESEARCH STUDY HELP ME IN ANY WAY?

You may not directly benefit from this research; however, we hope that your participation in the study may will help bring in the awareness about the health care need in Vietnamese Bduddhist nuns. Also this research might give clinicians some knowledge about culturally sensitive approach to provide health care to Vietnamese Buddhist nuns as well as other religious professional populations.

8. WHAT ARE my RISKS OF being in THIS RESEARCH STUDY?

We believe there are no known risks associated with this education program; however, a possible inconvenience may be the time it takes to complete the study.

9. how will my personal information be protected?

Your privacy and confidentiality is important to us. The following procedures will be used to protect the confidentiality of your study records: the phone call with nun will take place in a private room so that your privacy will be protected. Your signed consent will be kept separately and securely in a locked file cabinet. Your name will not appear on the pre-assessment and the post assessment. At the conclusion of this study, the researchers may publish their findings. All the information will be presented in summary format and you will not be identified in any publications or presentations.

10. WILL MY INFORMATION (PRIVATE INFORMATION) BE USED FOR RESEARCH IN THE FUTURE?

Your private information or identifiers will be removed and there will be no name on the pre and post assessment documents.

11. WILL I BE GIVEN ANY MONEY OR OTHER COMPENSATION FOR BEING IN THIS RESEARCH STUDY?

The participants will not receive payment.

12. WHO CAN I TALK TO IF I HAVE QUESTIONS?

Take as long as you like before you make a decision. We will be happy to answer any question you have about this study. If you have further questions about this project or if you have a research-related problem, you may contact Uyen Nguyen at 206-291-4177

If you have any questions concerning your rights as a research subject, you may contact the University of Massachusetts Amherst Human Research Protection Office (HRPO) at (413) 545-3428 or humansubjects@ora.umass.edu.

13. WHAT HAPPENS IF I SAY YES, BUT I CHANGE MY MIND LATER?

You do not have to be in this study if you do not want to. If you agree to be in the study, but later change your mind, you may drop out at any time. There are no penalties or consequences of any kind if you decide that you do not want to participate.

14. WHAT IF I AM INJURED?

There will be no risk of injury related to this project. The University of Massachusetts does not have a program for compensating subjects for injury or complications related to human subjects research.

15. SUBJECT STATEMENT OF VOLUNTARY CONSENT

When signing this form, I am agreeing to voluntarily enter this study. I have had a chance to read this consent form, and it was explained to me in a language which I use. I have had the opportunity to ask questions and have received satisfactory answers. I have been informed that I can withdraw at any time. A copy of this signed Informed Consent Form has been given to me.

Participant Signature:

Print Name:

Date:

By signing below, I indicate that the participant has read and, to the best of my knowledge, understands the details contained in this document and has been given a copy.

Signature of Person

Print Name:

Date:

Obtaining Consent

Appendix H

Translated Informed Consent (in Vietnamese language)

Mẫu đơn đồng ý tham gia vào nghiên cứu Đại học Massachusetts Amherst

Đề tài nghiên cứu: Giáo dục về bệnh tim mạch cho cộng đồng Ni giới Phật tử Việt Nam

Người thực hiện: Uyên Nguyễn, Dr. Kalpana Poudel-Tandukar, Ph.D., MPH, MPHC, CGM

1. MẪU ĐƠN NÀY LÀ GÌ?

Mẫu đơn này được gọi là Mẫu đơn đồng ý tham gia vào dự án “Giáo dục về bệnh tim mạch cho cộng đồng Ni giới Phật tử Việt Nam”. Mẫu đơn này cung cấp thông tin để ni cô có thể quyết định về việc tham gia vào Đề tài nghiên cứu này. Ni cô sẽ có thời gian để suy nghĩ kỹ vấn đề này và đặt câu hỏi ngay bây giờ và bất kỳ lúc nào. Nếu Ni cô quyết định tham gia, Ni cô sẽ ký vào Mẫu đơn này.

2. MỘT SỐ ẢNH HƯỞNG QUAN TRỌNG MÀ TÔI CẦN BIẾT LÀ GÌ?

Việc tham gia vào dự án này là tự nguyện. Đây là một Dự án giáo dục cộng đồng về sức khỏe và bệnh tim mạch qua điện thoại. Mục đích của nghiên cứu này là nâng cao kiến thức về sức khỏe tim mạch cho các nữ tu Việt Nam ở khu vực Seattle, WA.

Không có bất kỳ rủi ro nào liên quan đến nghiên cứu này. Tuy nhiên thời gian của cuộc nói chuyện trên điện thoại khoảng một giờ có thể là một bất tiện cho Ni cô.

Khi tham gia vào dự án này, các nữ tu sẽ có cơ hội củng cố kiến thức về CVDs mà họ đã có hoặc bổ sung bất kỳ thông tin nào còn thiếu.

3. TẠI SAO CHÚNG TÔI LẠI THỰC HIỆN NGHIÊN CỨU NÀY?

Hoàn tất dự án này sẽ giúp cô Uyên Nguyễn lấy Bằng Tiến sĩ về chăm sóc sức khỏe của Đại học Massachusetts -Amherst

4. AI CÓ THỂ THAM GIA VÀO NGHIÊN CỨU NÀY?

Đối tượng tham dự là các Ni sư Việt Nam từ 18 tuổi trở lên. Dự án sẽ được tiến hành với từng nữ tu qua cuộc gọi điện thoại.

5. NGHIÊN CỨU NGHIÊN CỨU NÀY SẼ THỰC HIỆN Ở Đâu VÀ CÓ BAO NHIÊU NGƯỜI THAM GIA?

Dự án sẽ được tiến hành với từng nữ tu qua điện thoại.

6. TÔI SẼ LÀM GÌ VÀ SẼ MẤT BAO NHIÊU THỜI GIAN?

Nếu Ni cô đồng ý tham gia vào nghiên cứu này, Ni cô sẽ tham gia vào một cuộc điện thoại trong khoảng 60 phút bao gồm 10 phút giới thiệu và giải thích đề tài nghiên cứu và mẫu đơn này, 10 phút kiểm tra kiến thức về bệnh tim mạch, 30 phút củng cố kiến thức về CVDs , 5 phút cho các câu hỏi, trả lời và kết thúc cuộc gọi. Ni cô có thể bỏ qua bất kỳ câu hỏi nào Ni cô cảm thấy không thoải mái khi trả lời.

7. TÔI SẼ CÓ LỢI ÍCH GÌ TRONG VIỆC NGHIÊN CỨU NÀY ?

Ni cô sẽ không trực tiếp hưởng quyền lợi từ nghiên cứu này. Tuy nhiên, chúng tôi hy vọng rằng sự tham gia của Ni cô trong nghiên cứu có thể giúp nâng cao nhận thức về nhu cầu chăm sóc sức khỏe ở các nữ tu Việt Nam. Ngoài ra, nghiên cứu này có thể cung cấp cho các bác sĩ lâm sàng một số kiến thức về văn hóa và phương pháp tiếp cận căn bản với tu sĩ Phật giáo để chăm sóc sức khỏe cho các nữ tu sĩ Phật giáo Việt Nam cũng như các nhóm tôn giáo khác.

8. RỦI RO CỦA TÔI TRONG NGHIÊN CỨU NÀY LÀ GÌ?

Chúng tôi tin rằng không có rủi ro nào liên quan đến chương trình giáo dục này; tuy nhiên, thời gian trên điện thoại có thể một điều bất tiện cho Ni cô

9. THÔNG TIN CÁ NHÂN CỦA TÔI SẼ ĐƯỢC BẢO VỆ NHƯ THẾ NÀO?

Thông tin cá nhân của Ni cô là vấn đề quan trọng đối với chúng tôi. Các thủ tục sau đây sẽ được sử dụng để bảo vệ tính bí mật của thông tin cá nhân của Ni cô: cuộc điện thoại với Ni cô sẽ diễn ra trong phòng riêng để sự riêng tư của Ni cô được bảo vệ. Chữ ký của Ni cô sẽ được lưu giữ riêng biệt và an toàn trong tủ tài liệu có khóa. Tên của Ni cô sẽ không xuất hiện trên các bài đánh giá chất lượng. Khi kết thúc nghiên cứu này, người thực hiện có thể công bố những phát hiện của họ nhưng tất cả thông tin sẽ được trình bày dưới dạng tóm tắt và sẽ không có tên của Ni cô trong bất kỳ tài liệu nào.

10. THÔNG TIN CỦA TÔI CÓ ĐƯỢC SỬ DỤNG ĐỂ NGHIÊN CỨU TRONG TƯƠNG LAI KHÔNG?

Thông tin cá nhân của Ni cô sẽ được xóa và sẽ không có tên của Ni cô trong bất kỳ tài liệu nào

11. TÔI CÓ ĐƯỢC ĐƯA TIỀN HOẶC BỒI THƯỜNG NÀO KHÁC KHI THAM GIA NGHIÊN CỨU NÀY KHÔNG?

Những người tham gia sẽ không được nhận bồi thường hoặc quyền lợi nào.

12. TÔI CÓ THỂ NÓI CHUYỆN VỚI AI NẾU TÔI CÓ CÂU HỎI?

Chúng tôi sẽ sẵn lòng trả lời bất kỳ câu hỏi nào của Ni cô về nghiên cứu này. Nếu Ni cô có thêm bất kỳ câu hỏi về dự án này, Ni cô có thể liên hệ với Uyên Nguyễn theo số điện thoại 206-291-4177. Nếu Ni cô có bất kỳ câu hỏi nào liên quan đến quyền lợi của mình với tư cách là một đối tượng nghiên cứu, Ni cô có thể liên hệ với Văn phòng Bảo vệ Nghiên cứu Con người Amherst của Đại học Massachusetts (HRPO) theo số (413) 545-3428 hoặc peoplesubjects@ora.umass.edu.

13. ĐIỀU GÌ XẢY RA NẾU TÔI NÓI LÀ ĐỒNG Ý, NHƯNG SAU ĐÓ TÔI ĐỔI Ý ?

Ni cô không cần phải tham gia nghiên cứu này nếu Ni cô không muốn. Nếu Ni cô đồng ý tham gia nghiên cứu, nhưng sau đó đổi ý, Ni cô có thể ngừng lại bất cứ lúc nào. Không có hình phạt hoặc hậu quả dưới bất kỳ hình thức nào nếu Ni cô quyết định không muốn tham gia nữa.

14. NẾU TÔI BỊ THƯƠNG THÌ SAO?

Sẽ không có rủi ro bị thương liên quan đến dự án này. Đại học Massachusetts không có chương trình bồi thường cho các đối tượng bị thương hoặc biến chứng liên quan đến nghiên cứu với đối tượng là con người.

15. XÁC NHẬN SỰ ĐỒNG Ý TỰ NGUYỆN

Khi ký vào đơn này, tôi đồng ý tự nguyện tham gia nghiên cứu này. Tôi đã có cơ hội đọc mẫu chấp thuận này và nó đã được giải thích cho tôi bằng ngôn ngữ của tôi. Tôi đã có cơ hội đặt câu hỏi và nhận được câu trả lời thỏa đáng. Tôi đã được thông báo rằng tôi có thể quyết định không muốn tham gia bất kỳ lúc nào. Một bản sao của Mẫu đồng ý này đã được trao cho tôi.

Chữ ký của Người tham gia

Tên

Ngày

Bằng cách ký tên dưới đây, tôi cho biết rằng tôi tham gia đã đọc và hiểu các chi tiết có trong tài liệu này và đã được cấp một bản sao.

Chữ ký của người nhận đơn

Tên

Ngày

Appendix I

Percentage of Correct Answers for CVDs Awareness Questionnaires

To Assess General knowledge about CVDs	Pre-intervention %	Post-intervention %
1. Hypertension, Heart attack and Stroke are common cardiovascular disease	100	100
2. Difficult breathing and chest pain radiated to the arm are the common signs of heart attack	20	100
3. Hypertension usually has no obvious signs or symptoms	40	100
4. High salt diet is a risk factor of hypertension and CVDs	80	100
5. Physical inactivity is a risk factor of hypertension and CVDs	80	80
6. High stress level might cause hypertension, heart attack and stroke	60	80
7. Hypertension and diabetes increase the risk of heart attack and stroke	40	100
8. Overweight or obesity increase the risk of heart attack and stroke	100	100
9. Family history contributes to the of hypertension and CVDs	40	60
10. Low salt diet, more fiber and moderate physical activities, about 2 ½ hrs. a week, will help decrease hypertension, heart attack and stroke	80	100
To Assess Self-perceived about CVDs		
1. I feel sure that I will have a heart attack or stroke.	0	0
2. I am worried that I might have a heart attack or stroke	20	80
3. I am not worried that I might have a heart attack or stroke	20	80
4. I am very healthy so I will not have a heart attack or stroke.	0	60
5. My lifestyle habits do not put me at risk for having a heart attack or stroke.	0	80
To Assess the readiness to change behavior about CVDs		
1. I am not confident about my English skills , I cannot go to see health care provider	60	80
2. I cannot afford to buy healthy foods.	60	60
3. I am ready or started to eat less sodium , more fruit and vegetables every day	60	80
4. I am ready or started to manage my weight	60	100
5. I am ready or started to exercise 30 minutes a day or 2 ½ hrs. every week	60	100