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Development of a Personalized Education Program Based on an Assessment of Knowledge of Coronary Heart Disease and Risk Factors in a Filipino-American Community in New York City

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DEVELOPMENT OF A PERSONALIZED PROGRAM BASED ON AN ASSESSEMENT OF KNOWLEDGE
OF CORONARY DISEASE AND RISK FACTORS IN A FILIPINO-AMERICAN COMMUNITY IN
NEW YORK CITY

Presented in Partial Fulfillment
of the Requirements for the Degree
Doctor of Nursing Practice

By

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2015

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Copyright

By

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2015

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Abstract

Filipino-Americans (FAs) are considered the fastest growing Asian immigrant population in the United States. There are about 2.6 million Filipino-Americans living in the United States (U.S. Census, 2010). Coronary Heart Disease (CHD) is the leading cause of death among FAs in the United States (National Vital Statistics, 2009). Research studies on CHD and CHD risk factors among FAs are limited. The purpose of the study was to explore FAs' knowledge of CHD, risk factors for CHD and to provide a personalized educational intervention in raising awareness and changing attitudes about CHD among FAs aged 35-75 in a community setting in Woodside, New York. Knowledge about CHD and its risk factors are vital components in engaging FAs to a healthier lifestyle. A quantitative study with a descriptive design was used in the study to explore CHD knowledge and CHD risk factors among FAs in a community setting. The Heart Disease Facts Questionnaire (Wagner, Lacey, Chyun, & Abbott, 2005), Socio-demographic and Cardiac Risk profile was used to obtain the data for the study. Data was gathered and obtained from September 2014 to December 2014 in a convenience sample of thirty seven participants. Simple descriptive statistics, such as mean, standard deviation and percentages, were used to analyze the data in the study. A personalized education program was provided to the participants based on their CHD knowledge and cardiac risk profile. The participants had suboptimal scores on the HDFQ questionnaire and the participants had some significant risk factors for CHD. The study revealed that the majority of the participants' attitudes or feelings about making lifestyle changes related to the prevention of CHD changed after their personalized education intervention. Despite the limitations in the study, data gathered in the study is a step toward developing evidence-based prevention and health promotion interventions to reduce the risk of coronary heart disease among FA population.

DEVELOPMENT OF A PERSONALIZED PROGRAM BASED ON AN ASSESSMENT OF KNOWLEDGE OF CORONARY DISEASE AND RISK FACTORS IN A FILIPINO-AMERICAN COMMUNITY IN NEW YORK CITY

Introduction

Coronary Heart Disease (CHD) is the leading cause of death among Americans in the United States (American Heart Association, 2011) in spite of significant improvements in its treatment and prevention (Greenlund, Keenan, Clayton, Pandey & Hong, 2012). Coronary heart disease includes problems such as arteriosclerosis, ischemic heart disease and hypertension (Mathews & Zachariah, 2008). The American Heart Association (AHA) divides CHD risk factors into two categories: modifiable and non-modifiable. Non-modifiable CHD risk factors include (a) heredity (b) age and (c) gender. Modifiable CHD risk factors include (a) diabetes (b) hypertension (c) high lipid level (d) obesity and overweight (e) smoking and (f) physical inactivity (American Heart Association, 2014). One of the goals of Healthy People 2020 is to improve cardiovascular health and quality of life among Americans. This is accomplished through detection, prevention and treatment of risk factors associated with coronary heart disease (Healthy People 2020, 2010).

Background

Among Filipino-Americans, coronary heart disease is the leading cause of death (National Vital Statistics Report, 2009); they have the second highest CHD rate after Asian Indians (Palaniappan, et al 2010). Therefore, every effort must be made to improve the cardiovascular health and quality of life among FAs. Strategies to improve cardiovascular health include prevention, detection and treatment of coronary heart disease risk factors which are aligned to the goals of Healthy People 2020. Very little information from literature has been published on Filipino-Americans knowledge on CHD and CHD risk factors. Therefore, the purpose of the study was to explore Filipino-Americans' CHD knowledge and CHD risk factors in a community setting

and to provide a personalized education intervention based on their CHD knowledge and CHD risk factors.

Literature Review

A review of the literature yielded few studies on assessing CHD knowledge among South Asians (Kandula et al., 2010), Korean (Hwang & Zerwic, 2008) and Chinese and Vietnamese (Ton et al., 2011) immigrants in the United States. Only one study among Filipino-Americans (Dalusung-Angosta, 2013) has been published. A literature review from various Asian-American populations was chosen as part of the literature review since Filipino-Americans fall within this population.

Hwang & Zerwic (2008) studied 116 Korean immigrants in a Mid-western metropolitan area assessing knowledge of heart attack symptoms and risk factors. A convenience sample of Korean immigrants who were recruited through Korean churches and markets, participated in the study. Knowledge of heart attack symptoms were assessed using both open-ended questions and a structured questionnaire. The Open ended questions included such questions as: "What do you think are the symptoms of heart attack?" and "what would you do if someone else was having a heart attack?" The structured questionnaire in the study contained 10 heart attack symptoms and 9 symptoms not commonly experienced during a heart attack. Heart attack symptoms and risk factors were selected by the researcher through extensive review of literature. Results of the study were variable regarding the participants' knowledge of heart attack, as well as its risk factors. Some of the Korean immigrants were quite knowledgeable about heart attack symptoms and risk factors, whereas others had very poor knowledge base. How the researchers established validity and reliability of the tools were not discussed.

Kandula et al. (2010) examined South Asians' knowledge and beliefs about CHD in a cross-sectional study of 270 South Asian adults in Illinois. The participants were identified as Asian Indian or Pakistani between the ages of 20-75 years old. A standardized survey was used to assess knowledge and attitudes about CHD using validated questions from other surveys; and new

questions were developed as needed. The questions in the survey were developed in English and later translated into Hindi and Urdu and later back-translated into English. Awareness of CHD and attitudes were assessed using open-ended questions. Examples of questions included: "What do you think is the greatest health problem facing Indians and Pakistanis in the U.S?" and "What disease are most Indians and Pakistanis in the U.S. dying from?" Knowledge of CHD was assessed using two unprompted, open-ended questions: "In your opinion, what are the major causes of heart attack?" and "What things are important for preventing a heart attack?" A multivariate regression model was used to examine the associations between socio-demographic and CHD knowledge and attitudes and preventability. The results of the study showed that 81% of the participants had one or more CHD risk factors and that the majority of the participants (89%) said they knew little or nothing about CHD. In addition, the majority of the South Asians in this study believe that CHD is not preventable and had low awareness of modifiable risk factors. Hence, the study articulated that CHD education should target the knowledge gaps as evident in this study. The researchers used previously validated questions and surveys on their study. However, reliability and validity may have been compromised as the tool was not validated after translation into another language.

Ton et al. (2011) assessed knowledge of cardiovascular disease (CVD) and risk factors among Chinese, Korean and Vietnamese immigrant populations through eight focus groups of 77 participants between the ages of 36 and 84 years old in Seattle, Washington. The researcher developed field guides to gather information on participants' beliefs, experiences and knowledge of CVD concepts including heart disease, stroke, high blood pressure, and high cholesterol. Focus groups were conducted at health clinics, churches and community centers where sessions in the focus groups were audio-recorded by the facilitator and the researcher. Data obtained from the focus group were analyzed using content analysis. From the content analysis, certain patterns were observed leading into an understanding how Chinese, Korean and Vietnamese immigrants perceived CVD. More importantly, the participants were able to identify important symptoms of

heart attack. However, knowledge regarding underlying mechanisms of heart disease were not always accurate. Concepts of CVD used were written in the participant's appropriate ethnic language.

These studies clearly depict that there are indeed gaps in knowledge about coronary heart disease or cardiovascular disease and its risk factors among Korean, Chinese, Vietnamese and South Asian groups. These gaps in knowledge about CHD and CHD risk factors need to be addressed to these groups as well as among Filipino-Americans.

In another study, Dalusung-Angosta (2013) studied 120 Filipino-Americans recruited from three primary care clinics in Las Vegas, Nevada, to examine the baseline knowledge and risk factors of CHD among Filipino-Americans and to identify the predictors of CHD knowledge. CHD knowledge was obtained using the Heart Disease Fact questionnaire (Wagner et al., 2005). A demographic questionnaire was also used to assess the presence of CHD risk factors. The study concluded that Filipino-Americans who were connected to primary care services were knowledgeable about CHD and that the participants had common risk factors of: hypertension, diabetes mellitus type 2, dyslipidemia, abdominal adiposity, overweight, lack of exercise, and smoking. In addition, the study concluded that predictors of CHD knowledge include: gender and education.

In these studies, the researchers gathered information on participants' self-report of risk factors for CHD (hypertension, diabetes mellitus 2, dyslipidemia, overweight, lack of physical activity and/or smoking), in addition to CHD knowledge. Assessing risk factors as conducted in these studies can play a role in the participant's CHD knowledge. Results from these studies have shown that some participants knew signs and symptoms of heart attack but the majority of the participants lack knowledge on the contributing factors to coronary heart disease.

All the studies, with the exception of Dalusung-Angosta (2013) did not use any theoretical framework in carrying out their work. This study is the only nurse-led study to explore CHD

knowledge and risk factors among Filipino-Americans in the community setting. Dalusung-Angosta (2013) found that the Filipino-Americans were very knowledgeable about Coronary Artery Disease. Perhaps the participants' connection and accessibility to health care services put them at a more advantage as compared to their counterparts.

Most of the studies (Hwang & Zerwic, 2008; Kandula et al., 2010; Ton et al., 2011) were done outside a health care facility and were not connected to any primary care services. The participants had low socioeconomic and educational levels. Perhaps two distinct different types of studies need to be explored: one at a community level and one similar to that of Dalusung-Angosta, 2013. Participants with connections to primary care services would perhaps be more knowledgeable about CHD and thus might not be a true representation of the population.

Coronary Heart Disease and cardiovascular disease are main health concerns in the United States. Every effort must be made to manage and prevent CHD and other cardiovascular diseases. Educating the population is one of the strategies that can be employed for the prevention of CHD among FAs. An understanding of the individual's learning styles is essential in the success of attaining and motivating the goals set for any individual or learner.

Adult learners have different styles of learning. Malcolm Knowles (1970), a pioneer in the field of adult learning and the first person to theorize how adults learn, described adult learning as a process of self-directed inquiry. Knowles (1970) identified the six characteristics of adult learners: (1) Autonomous and self-directed (2) Accumulating a foundation of experiences and knowledge (3) Goal oriented (4) Relevancy oriented (5) Practical and (6) Need to be shown respect. Knowles also advocated that the climate of mutual trust and clarification of mutual expectations with the learner must be fostered. Knowles (1990) also identified the foundations for adult learning which include (1) Motivation to learn (2) Rich life experiences (3) Readiness to learn (4) Orientation to learning (5) Autonomy and self-directedness.

Adult learners or individuals participate or engage in a learning experience to create change. Change in the individual can include change in (1) their skills (2) behavior (3) knowledge level or (4) their attitude about things (Adult Education Centre, 2005).

Literature also suggests that adult learners learn best when there is motivation or the adult learner is concerned on knowing the information (Russell, 2006). According to Zemke & Zemke (1995), the key to motivating adults to learn is to tap into the adult's most teachable moments. Adult learners are also motivated to learn based on six sources of motivation (Table 1), (Leib, 1991).

Social Relationships: to make new friends; to meet a need for associations and friendships
External Expectations: to comply with instructions from someone else: to fulfill recommendations from someone with formal authority
Social Welfare: to improve ability to serve mankind; to improve ability to participate in community work
Personal Advancement: to achieve higher status in a job; secure professional advancement
Escape/Stimulation: to relieve boredom; provide a break in the routine of home or work
Cognitive Interest: to learn for the sake of learning; to satisfy an inquiring mind

Table 1: Sources of Motivation for Adult Learning

Although each individual or adult learner has a unique style or process, it is important that educators, health care professionals or advanced practice nurses assess and take into consideration the adult learner's unique learning styles and processes when providing any education or training. Health care professionals, providers and designated educators and instructors must direct and focus their time and energy on assessing the adult learner's styles, motivation and characteristics. The collaborative effort between the health care professional along with the adult learner will lead to a success and benefit to all members involved in the learning activity.

It has been documented in literature that indeed coronary heart disease is the number one cause of death among Americans, including Filipino-Americans, and that there are indeed gaps in addressing this issue. As previously mentioned, there has only been one study which addressed CHD knowledge among Filipino-Americans connected to primary care services, but none in the community setting. Thus, there is a need to explore CHD knowledge and CHD risk factors among Filipino-Americans in the community setting. One of the many ways to address this issue is through the development of health promotion or preventative measures. In the meantime, an assessment on CHD knowledge is imperative in Filipino-Americans.

Significance of Problem

Coronary heart disease has been considered the leading cause of death among Americans as well as among Filipino-Americans. The goals of American Heart Association and the American College of Cardiology are to prevent cardiovascular diseases through research and education (American Heart Association, 2013). In 2009, President Barack Obama signed an Executive Order calling for ways and strategies to improve health and assess the health disparities among Asian-Americans including Filipino-Americans (American Heart Association, 2010). As a rapidly growing population in the United States, Filipino-Americans' overall health has major implications in the future of public health cost (Narayan et al., 2010).

Literature and research study about cardiovascular health and knowledge of coronary heart disease among Filipino-Americans is very limited and scarce. The lack of literature and research in this population provides a window of opportunity for nursing and health care professionals to address the issue of CHD among FAs. Strategies to improve cardiovascular health among FAs include prevention, detection and treatment of coronary heart disease risk factors which are aligned to the goals of Healthy People 2020.

Theoretical Framework

The Health Belief Model (HBM) was used as the conceptual framework for the study in exploring Filipino-American's coronary heart disease (CHD) knowledge and CHD risk factors. The model has been used to guide the development of disease prevention intervention and health promoting behaviors (Rosenstock & Stretcher, 1997). The HBM model was developed in the 1950's by a group of U.S. Public Health Service psychologists to explain why so few individuals were participating in programs to prevent and detect diseases. The HBM proposes that an individual's health related behavior depends on four perceptions: (1) perceived susceptibility (2) perceived severity (3) perceived benefits and (4) perceived barriers and the modifying factor of knowledge (Appendix A). Two additional concepts (1) motivation and (2) self-efficacy were later added through research as the HBM evolved (Glanz et al., 2002).

Under the HBM, an individual is more likely to take preventive action or health promoting behaviors if the individual believes that he/she is susceptible to a specific health risk (perceived susceptibility); if the individual believes that the health condition will lead to a potential serious consequences (perceived severity); if the individual believes that the action available to him/her will provide benefit in reducing his/her susceptibility to or the severity of the condition (perceived benefits) and if the individual believes that the anticipated barriers to taking or engaging in an action do not outweigh the benefits (perceived barriers) (Glanz et al., 2002).

The HBM has been used to explain and predict health behaviors, including heart disease, cardiac rehabilitation and cardiovascular risk reductions (Chiou et al., 2009; Shanks, 2009; Katz et al., 2009). The four perceptions of the HBM can be used individually or in combination to explain health behavior. Given the aims of the study in exploring Filipino-Americans CHD knowledge and CHD risk factors, the perception of perceived susceptibility will be used. Perceived susceptibility has been considered as one of the most powerful perceptions in prompting an individual to adopt healthier behaviors. The greater the perceived risk is, the greater the likelihood of engaging in

behaviors to decrease the risk (Glanz et al., 2002). Hence, one concept of the HBM was used provide a clear understanding and useful framework to explore Filipino-Americans perceived CHD risk factors (perceived susceptibility) and to provide evidence-based preventive and promoting interventions.

It has been noted that (a) diabetes (b) hypertension (c) high lipid level (d) obesity and overweight (e) smoking and (f) physical inactivity are all modifiable risk factors that can contribute to the development of CHD (American Heart Association, 2014). Perceived susceptibility to CHD was determined by asking the participants' the following questions: Please indicate from the following list of CHD risk factors all that apply to you: diabetes, hypertension, high lipid level, obesity or overweight, smoking and physical inactivity.

Another variable of the HBM is the modifying factor of knowledge. Knowledge, as a modifying factor under this model, can influence personal perceptions (Glanz et al., 2002). The participants' knowledge about CHD based on the HDFQ was also explored to perhaps influence or change the participants' perceptions about CHD.

Problem Statement

Coronary heart disease is the number one cause of death among Filipino-Americans. Because knowledge and awareness of risk factors related to heart disease have been associated with health promotion behaviors (Yuqiu & Wright, 2008), an understanding of FAs' knowledge about CHD and its risk factors is a step toward understanding how to reduce the risk of coronary heart disease among the Filipino-American population as well as a step in developing personalized education program based on CHD risk factors and cardiac risk profile.

Purpose

The purpose of the study was to explore FAs' knowledge about CHD and its risk factors among Filipino-Americans in a community setting. In addition, the study also provided the

participants a personalized education intervention based on the participants' CHD risk factors and explored the participant's feelings and attitudes in making lifestyle changes in the prevention of CHD among FAs. Generation of data from this study can provide valuable information and insights in the development evidence-based preventive and health promoting interventions to all Filipino-Americans.

Project Implementation

Design

A quantitative study with a descriptive design was used in the study to explore FAs' CHD knowledge and CHD risk factors among FAs in a community setting.

Objective

The overall objective of the study was to explore FAs' knowledge about CHD and the participants' cardiac risk profile and provide a personalized education intervention based their cardiac risk factors in a community setting.

Method

The study used a quantitative method with a questionnaire and a survey to assess knowledge of CHD and cardiac risk factors. The Heart Disease Fact Questionnaire (HDFQ) as developed by Wagner et al., (2005) is a 25-item questionnaire that was developed to assess participants' knowledge of major risk factors for the development of CHD. The 25-item questions consist of three answer options: "true", "false" and "don't know" (Appendix B). The HDFQ is readable to an average 13 year old person and imposes no burden to the participants. The HDFQ questionnaire was reviewed by experts in the fields of heart disease and diabetes for content validity, face validity, clarity, and readability. The HDFQ demonstrated adequate internal consistency, with Kuder-Richardson-20 formula=0.77 and good item-total correlations. Discrimination function analysis (DFA) was also performed on the HDFQ tool to assess for validity (Wagner et al., 2005). Hence, the HDFQ tool is appropriate and is aligned with the purpose of this

study. A socio-demographic (Appendix C) and cardiac risk profile (Appendix D) were also used which contained questions regarding participant's report of risk factors (Hypertension, Diabetes, Obesity, Hyperlipidemia, Smoking and Physical Inactivity) for coronary heart disease.

The goals of the American Heart Association (AHA) and the American College of Cardiology (ACC) are the prevention of cardiovascular diseases and improvement in the management of people who have these diseases through education and research in the development of practice guidelines associated with CHD risk assessment and management (American Heart Association, 2013). At the conclusion of the study and based on their responses from the survey, each participant was provided with a personalized education program based on their individual risk. The participants were provided with literature materials and handouts as developed by AHA (Appendix E) as well as provided some time for discussion or any questions the participants had. The participants were also queried if their attitudes or feelings about making lifestyle changes for preventing CHD were different after the discussion. Some of the participants were also referred and provided with a contact information to nearby health care facilities that provide screening and preventative measures for smoking cessation, blood pressure, and cholesterol and diabetes screenings. These facilities are members of the New York City Health and Hospital Corporation that are the public safety net of New York City (Appendix F). These facilities provide high quality health care to any individuals regardless of the ability to pay or immigration status.

Sample

The study was conducted at a local community setting where many Filipino-Americans congregate on a weekly basis. The study was conducted one evening a week between the months of September 2014 through December 2004. Flyers with specific information about the project were posted in the auditorium of the school where Filipino-Americans congregate on a weekly basis (Appendix G). Following Otterbein University's Institutional Review Board Approval, a convenience

sample size of 37 adult Filipino-American men and women between the ages of 35-75 were voluntarily recruited for the study. Inclusion criteria include a) Filipino-American ethnicity b) ability to speak, read and write English at a fourth-grade level or higher. Exclusion criteria include a) recent Myocardial Infarction (MI) or already diagnosed with coronary heart disease b) physical or mental limitations that may hinder the participants' understanding.

Protection of Human subjects

Full consents were obtained from participants (Appendix H) and the participants were told that the provision of community services was not affected by whether or not they participated in the study. Confidentiality was maintained for participants and the questionnaires were labeled with a code number to protect the participants' information.

Outcomes and Analysis

Filipino-Americans (FAs) are considered the fastest growing Asian immigrant population (U.S. Census, 2010) and CHD is the leading cause of death among FAs in the United States (National Vital Statistics, 2009). The study explored FAs' knowledge of CHD and its risk factors in a community setting in Woodside, New York. Based on FAs' CHD knowledge and cardiac risk profile, a personalized education program was provided to each participant. In addition, the participants' attitudes or feelings about making lifestyle changes were explored after their personalized education intervention. The study was conducted from September 2014 through December 2014 in a community setting in Woodside, New York. The study was a quantitative, descriptive study in which simple descriptive statistics were used to fully describe the sample studied. Microsoft Excel Version 2013 was used for statistical analyses.

Socio-demographic and Cardiac Risks Characteristics of Filipino-Americans

During the 3 month recruitment period, a total of 37 participants were recruited by means of convenience sampling from a community setting in Woodside, New York. Demographic and

cardiac risk characteristics of the enrolled participants are presented in Table 1 and Table 2. The participants' mean age was 55.19 (SD±11.60) years; 21.6 % were male and 78.4% were female, 78.4 % employed, 5.4 % unemployed, 16.2 % retired. The majority of the participants (65%) were married and 27.0 % were single.

Socio-Demographic	
Age Mean	55.19
Age Standard Deviation	11.60
Percentages of Males	21.62%
Percentages Of Females	78.38%
Percentage Employed	78.38%
Percentage Unemployed	5.41%
Percentage Retired	16.22%
Percentage Married	67.57%
Percentage Single	27.03%
Percentage Divorced	2.70%
Percentage Separated	0.00%
Percentage Widowed	2.70%

Table 2 Socio-Demographic Profile

In a self-reported cardiac risk profile, 78% of the recruited participants reported that they exercise at least once a week. About 48.6 % of the participants self-identified themselves as having high blood pressure; 18.9 % as having diabetes, 40.5 % as having high cholesterol and 21.6 % as being obese or overweight. Only 2.7 % of the participants reported being smokers.

Cardiac Risk Profile	
Percentage who have high BP	48.65%
Percentage who have diabetes	18.92%
Percentage who have high cholesterol	40.54%
Percentage who are overweight/obese	21.62%
Percentage who smoke	2.70%
Percentage who exercise	78.38%

Table 3 Cardiac Risk Profile

Filipino-Americans CHD knowledge

The mean score of the Heart Disease Fact Questionnaire (HDFQ) was 18.6 (SD±3.78) which was lower compared to one previous study (Wagner, et. al, 2005) mean 20.4, SD=3.0, range 2-25. However, the mean score on this study was higher compared with two other studies (Wagner & Lacey, 2005) mean score of 17.5, SD=5.0 and (Dalusung-Angosta, 2013) mean score 15.8, SD=4.26. The possible range of scores on this scale was 0-25. The range score of the participants in this study was 15-25. All 37 (100%) of participants knew that a family history of heart disease can increase the risk for developing heart disease, 29 (78.4%) of participants did not know that people with diabetes tend to have low HDL (good) cholesterol. Table 4 represents the participant's CHD knowledge scores in percentages. Table 4 represents the participant's responses to the HDFQ questions that were answered most often and least often correctly.

Table 4 Participant's CHD Knowledge scores in percentages (N=37)

Question	True ²	False ²	I don't know ²
1. A person always knows when they have heart disease	14	78	8
2. If you have a family history of heart disease you are at risk for developing heart disease	95	5	0
3. The older a person is, the greater their risk of having heart disease	62	30	8
4. Smoking is a risk factor for heart disease	87	8	5
5. A person who stops smoking will lower their risk of developing heart disease	62	24	14
6. High blood pressure is a risk factor for heart disease	87	8	5
7. Keeping blood pressure under control will reduce a person's risk for developing heart disease	78	14	8
8. High Cholesterol is a risk factor for developing heart disease	87	3	10
9. Eating fatty foods does not affect blood cholesterol levels	11	84	5
10. If your "good" cholesterol (HDL) is high, you are at risk for heart disease	8	73	19
11. If your "bad" cholesterol (LDL) is high, you are at risk for heart disease	92	3	5
12. Being overweight increases a person's risk for heart disease	84	8	8
13. Regular physical activity will lower a person's chance of getting heart disease	81	11	8
14. Only exercising at a gym or in an exercise class will help lower a person's chance of developing heart disease	4	84	8
15. Walking and gardening are considered exercise that will help lower a person's chance of developing heart disease	78	11	11
16. Diabetes is a risk factor for developing heart disease	70	16	14
17. High blood sugar puts a strain on the heart	70	8	22
18. If your blood sugar is high over several months it can cause your cholesterol level to go up and increase your risk of heart disease	59	11	30
19. A person who has diabetes can reduce their risk of developing heart disease if they keep their blood sugar levels under control	68	8	24
20. People with diabetes rarely have high cholesterol	22	51	37
21. If a person has diabetes, keeping their cholesterol under control will help to lower their chance of developing heart disease	81	11	8
22. People with diabetes tend to have low HDL (good) cholesterol	16	41	43
23. A person who has diabetes can reduce their risk of developing heart disease if they keep their pressure under control	62	14	24
24. A person who has diabetes can reduce their risk of developing heart disease if they keep their weight under control	79	5	16
25. Men with diabetes have a higher risk of heart disease than women with diabetes	27	24	49
² Data shown as frequency (%)			

Table 5 Top 5 Questions on HDFQ Answered Most Correctly and least often or "did not know"

Five questions correctly answered most often	Number (%)
If you have a family history of heart disease, you are at risk for developing heart disease	35 (95%)
If your "bad" cholesterol (LDL) is high, you are at risk for heart disease	34(92%)
Smoking is a risk factor for heart disease	32(87%)
High blood pressure is a risk factor for heart disease	32(87%)
Eating fatty foods does not affect blood cholesterol	31(84%)
Five question incorrectly answered most often or "did not know"	
People with diabetes tend to have low HDL (good) cholesterol	31(84%)
Men with diabetes have a higher risk of heart disease than women with diabetes	28(76%)
People with diabetes rarely have high cholesterol	19(51%)
If your blood sugar is high over several months it can cause your cholesterol level to go up and increase your risk of heart disease	15(41%)
A person who has diabetes can reduce their risk of developing heart disease if they keep their blood pressure under control	14(38%)

Based on the results of the HDFQ questionnaire, knowledge about diabetes among the participants was at a minimum. At the conclusion of the study, 75.7% of the participants were

more inclined to make lifestyle changes after their personalized education program in the prevention of CHD.

Conclusion, Summary & Recommendations

Summary

Coronary Heart Disease is the leading cause of death among Filipino-Americans. To combat and address this issue in the Filipino-American community, health care professionals and advanced practice nurses who encounter and manage the health of FAs are in a position to develop health promoting and disease prevention measures. The purpose of the study was to explore FAs knowledge of CHD, their risk factors and to provide an educational intervention to raise awareness and change attitudes about CHD among FAs aged 35-75 in a community setting in Woodside, New York. The study provided important insights and opportunity to examine FAs' knowledge and their risk factors to CHD. Results from the study indicated that knowledge about CHD was low compared with one previously published study (Wagner et al, 2005) mean 20.4, SD=3.0, range 2-25 but higher than others (Wagner, Abbott, & Lacey, 2005; Dalusung-Angosta, 2013) and that the participants have many risk factors that can contribute to the development of CHD. The study also indicated that knowledge about diabetes is at a minimum. On a positive note, the majority of the participants reported they were not smokers and exercised at least once a week. The results of the study also indicate that the majority of the participants' attitude or feelings about making lifestyle changes in the prevention of CHD changed after receiving some personalized education intervention.

Under the Health Belief Model, an individual is more likely to take preventative action or health promoting behaviors if the individual believes that he/she is susceptible to a specific health risk (Diabetes, Hypertension, High Cholesterol, Obesity, Smoking or Lack of Exercise or Inactivity). This study suggests that examining participants' CHD risk factors, bringing awareness to the participants and utilizing the HBM may be one approach in the prevention of CHD among FAs.

Limitations

Recruitment for the study occurred at a community setting and the use of a convenience sample limits generalizability; the results do not extend to the general population. This study is also limited by design and sample size. The sample size of 37 participants is small and predominately females. The limited time for recruitment, three months, and once-weekly access to the center also limited the study. Time allocated for each participant in providing a personalized education program based on the participant's cardiac risk factor was also limited and a barrier to providing one-on-one individual encounters.

Recommendations

Although the study provided some useful information and insights to the FA community, the study uncovered and opened up areas where further nursing research is needed. Some recommendations include (a) conduct similar research with a larger sample size, (b) conduct research at a variety of settings (c) utilized a longer period of time and a variety of days (d) provide ample time when providing a personalized education program (e) evaluate the effectiveness of the personalized education program at a later time (f) replicate the project with other ethnic groups.

Implications for Future in Nursing

Coronary Heart Disease continues to be a public health concern. This study has indeed provided some valuable information on CHD among FA. Nurses, advanced practice nurses and researchers are in a position where they can contribute to the body of knowledge in promoting the overall health of FAs. The study's findings can serve to educate nurses, advance practice nurses and health care professionals to develop future research endeavors that may enhance and protect the lives of FAs. Developing personalized education interventions, health initiatives and programs are needed and important to improve and increase awareness about CHD and its risk factors in the FA community.

Conclusion

Despite some of the limitations of this study, findings from this study provided some insights and understanding about FAs' knowledge about CHD and their risk factors. This study revealed suboptimal knowledge about CHD and provided an understanding of cardiac risk factors for FAs in which a personalized education program was provided to the participants. Knowledge and awareness of CHD risk factors are vital in the prevention of CHD in the FA community. Therefore, it is evident that additional research should be conducted on the FA community and more emphasis should be placed in the prevention of CHD through education and health promotion.

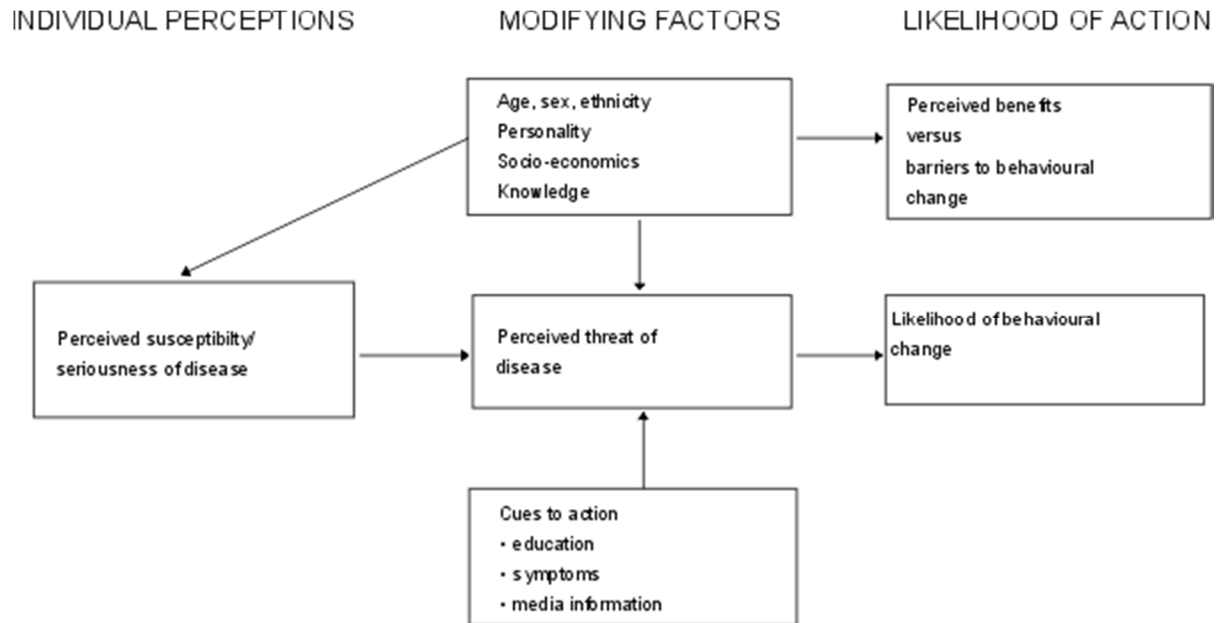
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Appendix A: The Health Belief Model



Source: Glanz et al, 2002, p. 52

Appendix B: The Heart Disease Fact Questionnaire

The Heart Disease Fact Questionnaire (HDFQ) by Wagner, Lacey, Chyun and Abbott (2005)

Instructions: Please circle only one answer to the following questions:

Code # ____ (do not fill in)

1. A person always knows when they have heart disease:

- a. True
- b. False
- c. I don't know

2. If you have a family history of heart disease you are at risk for developing heart disease:

- a. True
- b. False
- c. I don't know

3. The older a person is, the greater their risk of having heart disease:

- a. True
- b. False
- c. I don't know

4. Smoking is a risk factor for heart disease:

- a. True
- b. False
- c. I don't know

5. A person who stops smoking will lower their risk of developing heart disease:

- a. True
- b. False

c. I don't know

6. High blood pressure is a risk factor for heart disease:

a. True

b. False

c. I don't know

7. Keeping blood pressure under control will reduce a person's risk for developing heart disease:

a. True

b. False

c. I don't know

8. High cholesterol is a risk factor for developing heart disease:

a. True

b. False

c. I don't know

9. Eating fatty foods does not affect blood cholesterol levels:

a. True

b. False

c. I don't know

10. If your "good" cholesterol (HDL) is high you are at risk for heart disease:

a. True

b. False

c. I don't know

11. If your "bad" cholesterol (LDL) is high you are at risk factor for heart disease:

a. True

- b. False
- c. I don't know

12. Being overweight increases a person's risk for heart disease:

- a. True
- b. False
- c. I don't know

13. Regular physical activity will lower a person's chance of getting heart disease:

- a. True
- b. False
- c. I don't know

14. Only exercising at a gym or in an exercise class will help lower a person's chance of developing heart disease:

- a. True
- b. False
- c. I don't know

15. Walking and gardening are considered exercise that will help lower a person's chance of developing heart disease:

- a. True
- b. False
- c. I don't know

16. Diabetes is a risk factor for developing heart disease:

- a. True
- b. False
- c. I don't know

17. High blood sugar puts a strain on the heart:

- a. True
- b. False
- c. I don't know

18. If your blood sugar is high over several months it can cause your cholesterol level to go up and increase your risk of heart disease:

- a. True
- b. False
- c. I don't know

19. A person who has diabetes can reduce their risk of developing heart disease if they keep their blood sugar levels under control:

- a. True
- b. False
- c. I don't know

20. People with diabetes rarely have high cholesterol:

- a. True
- b. False
- c. I don't know

21. If a person has diabetes, keeping their cholesterol under control will help to lower their chance of developing heart disease:

- a. True
- b. False
- c. I don't know

22. People with diabetes tend to have low HDL (good) cholesterol:

- a. True
- b. False

c. I don't know

23. A person who has diabetes can reduce their risk of developing heart disease if they keep their blood pressure under control:

a. True

b. False

c. I don't know

24. A person who has diabetes can reduce their risk of developing heart disease if they keep their weight under control:

a. True

b. False

c. I don't know

25. Men with diabetes have a higher risk of heart disease than women with diabetes:

a. True

b. False

c. I don't know

Appendix C: Socio-demographic profile

Socio-demographic profile

1. Code #_____ (Leave blank)
2. Age: _____
3. Place of birth: _____
4. Gender: _____
5. Number of years living in the United States? _____
6. Marital Status:
 - a. Married _____
 - b. Single _____
 - c. Divorce _____
 - d. Separated _____
 - e. Widowed _____
7. Employment Status:
 - a. Employed _____
 - b. Unemployed _____

Appendix D: Cardiac Risk Profile

Cardiac Risk Profile

Code # _____ (Leave blank)

1. Please check all that apply to you

- a. Have you ever been told you have high blood pressure?

☐ Yes ☐ No ☐ Don't know

Do you know what your usual blood pressure is?

☐ Yes ☐ No ☐ Don't know

- b. Have you ever been told that you have Diabetes?

☐ Yes ☐ No ☐ Don't know

If yes, are you on medicine for diabetes?

If yes, what medicine are you taking for diabetes?

- c. Have you ever been told that your cholesterol is too high?

☐ Yes ☐ No ☐ Don't Know

Do you know what your cholesterol score is?

- d. Have you ever been told you were overweight or obese?

☐ Yes ☐ No ☐ Don't Know

Do you know what your weight is?

How tall are you?

- e. Are you a smoker? If yes, how many cigarettes a day you smoke?

☐ Yes ☐ No

If no, have you ever been a smoker?

- f. How much exercise do you get on a weekly basis?
(Specify what kind and estimate in minutes per week)

Appendix E: American Heart Association Handouts
By: American Heart Association, 2011



KNOW

LIFE'S SIMPLE 7™

It's never too late to make better life choices. Follow these seven steps to a healthier heart.

-  **Quit smoking.** It's the very best thing you can do for your health. As soon as you stop, your risk of heart disease and stroke drops.
-  **Maintain a healthy weight.** Too much body fat, especially at the waist, increases your risk for problems like high blood pressure and diabetes.
-  **Get active.** Finding time for just 30 minutes of moderate physical activity a day can really pay off in terms of health AND happiness.
-  **Eat better.** Follow recommended food guidelines for the right amount of the right nutrients.
-  **Control cholesterol.** Your total cholesterol should be under 200 mg/dL. If it is not, use diet, physical activity and weight management to keep it in check.
-  **Manage blood pressure.** To avoid the single biggest risk factor for heart disease, try to keep your blood pressure below 120/80 mm Hg.
-  **Reduce blood sugar.** Even small lifestyle changes add up to slow the long-term complications of diabetes.

Where do you stand with Life's Simple 7™?

FIND OUT

Find out your heart score at heart.org/MyLifeCheck



LIFE'S SIMPLE 7™

START YOUR NEW LIFE RESOLUTION.

In just a few minutes, learn your heart score and what you can do to live a healthier life.



Get Your Heart Score.

Take the My Life Check™ assessment to find out how you're doing with Life's Simple 7™ and get your personal heart score.

Take Action.

You'll get a customized action plan with the steps you need to improve your health.

Live Better.

Start small. Keep it simple. Before you know it, you'll have made the healthy changes needed to live your best life.

For more information, go to
heart.org/MyLifeCheck

  **My Life Check™**
Live Better With Life's Simple 7™



KNOW YOUR HIGH BLOOD PRESSURE

You may have high blood pressure and not even know it. That's why getting regular checkups is important. They're quick, easy, and painless. And they can save your life.

TAKE THE PRESSURE OFF

High blood pressure is sneaky. It can damage the arteries and veins that carry blood through your body, and you may not even know it until something bad happens to you – like a heart attack or a stroke.

When you have your blood pressure checked, you will receive two numbers. Both measure different things. For example:

120 The top number (systolic) is the pressure when your heart beats.

80 The bottom number (diastolic) is the pressure when your heart is at rest.

BLOOD PRESSURE GUIDELINES*

Systolic		Diastolic	Indicates
Less than 120	AND	Less than 80	Normal
120–139	OR	80–89	Prehypertension
140–159	OR	90–99	High – Stage 1
160 or higher	OR	100 or higher	High – Stage 2
More than 180	OR	More than 110	Crisis – Get help now! Emergency care needed

*Based on American Heart Association's 2010 Treatment Guidelines

LEARN MORE

heart.org/highbloodpressure



HIGH BLOOD PRESSURE

LOWER YOUR BLOOD PRESSURE

- Check it!**
Visit your doctor, clinic or pharmacy. Get your pressure read on a regular basis. Keep a log of readings.
- Chart it!**
Take that log to your doctor to discuss your options. Set goals for blood pressure, medications, healthy eating, and exercise. Then log on to Heart360.org and track your progress.
- Change it!**
Take back your health. Even simple changes like eating an apple instead of chips or taking a walk can make a big difference.

It's your life. Live it longer! Start now.

SHAKE THE SALT HABIT.

Too much salt can lead to high blood pressure. Since most salt is added to food, it is easy to cut down. Take the shaker off the table. Avoid high-salt foods. Try recipes from the American Heart Association's *Low-Salt Cookbook*. Visit shopheart.org to purchase.



For more information, go to heart.org/highbloodpressure



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CHOLESTEROL

Surprise! Cholesterol is not all bad. Your body needs some to stay healthy. However, too much of a good thing can be a problem.

WHY DO YOU CARE?

High cholesterol is a major risk factor for coronary heart disease.

The good news: You can lower high cholesterol, but first you have to understand your numbers.


WHAT SHOULD YOU WATCH?

When you have a cholesterol blood test, you're going to hear about these measurements:

- **Total cholesterol** is the overall number. Ideally, you want this to be less than 200 mg/dL.
- **LDL (bad cholesterol)** can clog arteries and increase risk for heart attack and stroke. Less than 100 mg/dL is optimal.
- **HDL (good cholesterol)** keeps LDL from clogging arteries. An HDL reading of 60 mg/dL or more is good.
- **Triglycerides** are a form of fat, usually associated with obesity, smoking, and other issues. This number should be 150 mg/dL or less.

YOUR GOAL

*Low levels of LDL and triglycerides;
high levels of HDL.*



CHOLESTEROL

HOW CAN YOU CHANGE YOUR CHOLESTEROL?


A smart cholesterol program starts with you and your healthcare provider. Feel free to start the discussion.

Cholesterol comes from two places: Your body and your food.

HERE'S HOW YOU CAN IMPACT THE NUMBERS:

- ① **Eat a heart-healthy diet** that is low in saturated fat and cholesterol.
- ② **Become more physically active.**
- ③ **Avoid tobacco smoke.**
- ④ **Know your heredity.** Even if you eat right, exercise, and avoid smoking, you can still have high cholesterol. It's hereditary. Talk to your doctor. There are medicines that can help manage cholesterol levels.
- ⑤ **Know your numbers.** Get tested regularly for cholesterol.

For more on cholesterol, go to
heart.org/cholesterol



©2011, American Heart Association. Also known as the Heart Fund. AHA-SD-2011-1170



Are you short on time or stamina, but want to start walking to improve your health? Here are some tips to get going:

- ① **Break it up.** Start with 10 minutes a day. Those minutes add up each day and each week.
- ② **Build it up.** Work up to 30 minutes a day (150 minutes/week) in segments of 10 minutes or more. Up the intensity (walk faster) and 75 minutes/week will do the trick.

TAKE THE FIRST STEP

Visit startwalkingnow.org to create a custom walking plan like this two-week, twice-a-day workout.

Sample Walking Plan

		Week 1	Week 2
Mon	Early walk	Easy 5–10 min	Easy 2 min Brisk 1 min Repeat 3–4x
	Later walk	Easy 5–10 min	Easy 8–10 min
Tue	Early walk	Easy 5–10 min	Easy 8–10 min
	Later walk	Easy 5–10 min	Easy 8–10 min
Wed	Early walk	Easy 2 min Brisk 1 min Repeat 3–4x	Easy 1 min Brisk 1 min Repeat 3–4x
	Later walk	Easy 5 min Brisk 3–5 min	Easy 5 min Brisk 3–5 min
Thu	Early walk	Easy 5–10 min	Easy 5 min
	Later walk	Easy 5–10 min	Brisk 3–5 min
Fri		Rest	Rest
Sat/Sun	One Walk	Easy 10–15 min	Easy 10–15 min

Find trackers, walking paths, and programs at:

startwalkingnow.org



PHYSICAL ACTIVITY

It's a fact. Without regular physical activity, the body will slowly but surely lose its strength and ability to function well.

Although some health benefits begin with as little as 60 minutes per week, a total of least 2 ½ hours of moderate intensity physical activity per week reduces your risk of heart disease.

- Lower blood pressure
- Increase "good" cholesterol
- Control blood sugar
- Reduce depression
- Reduce stress and anxiety
- Prevent weight gain

That's only 30 minutes a day — with weekends off!

SIMPLE STEPS ARE THE CURE FOR EXCUSES

Walking is a great way for anyone at any fitness level to get moving.*

- Brisk walking *is* moderate exercise.
- It has the lowest dropout rate of any physical activity.
- Start slowly and work up to more as you start to feel the benefits of regular physical activity pay off — and you will.

*If you have a chronic illness, consult with your doctor before starting any exercise program.

TAKE THE FIRST STEP

Visit startwalkingnow.org

Appendix F: Contact Information of New York City Health and Hospital Corporation

Elmhurst Hospital Center

79-01 Broadway Elmhurst, NY 11373

Contact: 718-334-4000

Queens Hospital Center

82-68 164 Street

Jamaica, New York 11432

Contact: 718-883-3131

Appendix G: Flyer



Filipino-Americans Needed for Research

Coronary Heart Disease is the leading cause of death among Filipino-Americans in the United States

My name is Mervin David, RN, and I am a Doctor of Nursing Practice (DNP) student at Otterbein University in Ohio. I am conducting research on Filipino-Americans' knowledge about risk factors for Coronary Heart Disease.

I am in search of participants who are Filipino-Americans between the ages of 35-75 who can read, understand and write in English, and who have not had heart attack, stroke or have any neurological deficits

Your participation in this study will provide useful information in helping the Filipino community understand how to prevent coronary heart disease.

The study consists of answering some questions that will take approximately 20-30 minutes to complete.

The study is strictly voluntary and confidential.

If you are interested in participating in the study, please contact Mervin David @917-876-0920

Thank You (Maraming salamat po)

Mervin David RN MSN NP-C CCRN CEN

Appendix H: Consent for Investigational Research

Consent for Investigational Research

Title of the Project: Development of a Personalized Education Program Based on an Assessment of Knowledge of Coronary Heart Disease and Risk Factors in a Filipino-American Community in New York City.

The Objective of the Project is: To explore Filipino-Americans' knowledge of coronary heart disease and its risk factors and to provide an educational intervention in the prevention of CHD among Filipino-Americans. The study is a quantitative study with a descriptive design where convenience sample of Filipino-Americans ages 35-75 will be given a questionnaire about CHD and CHD risk factors. A personalized education program will be provided to the participants based on their CHD knowledge and risk factors.

How long will I be participating in this project? It will only take 20-30 minutes to answer some questions.

What are the risks of the project?

There are minimal risks of slight psychological discomfort.

What are the benefits for taking part in this project?

The data obtained in this study will be used for the development of health preventive and health promoting interventions. In addition, as a participant you will have the opportunity to learn about your risk for Coronary Heart Disease and be provided individualized educational materials that will be useful in making or changing your lifestyle changes to avoid CHD.

Is there any compensation?

No compensation is provided for participating in this project.

Will the information about me be kept confidential?

Identities will not be disclosed on the questionnaire. Results of the questionnaires will be kept confidential.

How will my information be utilized?

Information will be summarized with other participants, anonymously in a written report that is a requirement for the student investigator to earn a doctoral degree.

What are my rights as a participant?

Participation in this project is voluntary. The participant may refuse to be a part of this project and may withdrawal from this project at any time. Choosing not to participate in this project will not affect access or participation in any activities in the community.

Whom do I call if I have questions or problems?

If you have questions about your rights as a research participant, you should contact the Otterbein University Institutional Review Board's Chairperson: Robert Kraft, PhD, the telephone number is 614-823-1473 and email at rkraft@otterbein.edu.

If there have been any problems associated with participation in this project, please contact the DNP student researcher Mr. Mervin David at 917-376-0920 or email at Mervin.David@otterbein.edu. Any other questions about this project can be answered by Patricia Keane, PhD, RN, CNP, the principle investigator, at 614-823-1678 or email at PKeane@otterbein.edu as soon as possible.

Additionally:

Participants will be given all other information that either the investigator or Institutional Review Board believes is pertinent to make an informed decision whether or not to participate in this project.

Participants may keep a signed copy of this consent for their records and future reference.

Participant's signatures on consent forms affirm that they are at least 18 years of age.

I hereby freely and voluntarily consent to take part in this project as described above. The consent is based on the verbal information provided to me. I have discussed the information with the student researcher, Mervin David, and have been given the opportunity to ask questions which have been answered to my satisfaction. Any questions I have about this research have been or will be addressed by Mervin David. I am free to ask additional questions at any time. I am able to refuse to take part or withdraw from this project at any time, without facing any penalty.

My signature below indicates that I voluntarily agree to take part in this project.

Appendix I: HDFQ Inquiry

Wagner, Julie <juwagner@uchc.edu>

7/21/14

to
me

Hello,
Thank you for your inquiry. You are welcome to use the HDFQ for research or clinical purposes. Any publications or presentations that result from it should cite the attached papers.
Good luck in your work.
The measures and papers are attached.
JW

From: David, Mervin [mailto:mervin.david@otterbein.edu]
Sent: Thursday, July 17, 2014 9:29 PM
To: Wagner, Julie
Cc: Patricia Keane
Subject: HDFQ

6 Attachments

