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CULTURAL FACTORS ASSOCIATED WITH AND PREDICTING HEALTH IN A SENIOR
REFUGEE POPULATION

By
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A dissertation
submitted in fulfillment
of the requirements for the degree of
Doctor of Philosophy in the Department of Nursing
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Committee Approval

To the Graduate Faculty,

The members of the committee appointed to examine the dissertation of Ashley Anderson find it satisfactory and recommend that it be accepted.

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June 13, 2017

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RE: regarding study number IRB-FY2017-259: How does the number of years living in the USA influence that are associated and predict health in a senior refugee population?

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Sincerely,

Ralph Baergen, PhD, MPH, CIP
Human Subjects Chair

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TABLE OF CONTENTS

List of Figures.....	x
List of Tables.....	xi
Abstract.....	xiv
Chapter 1: Introduction.....	1
Background of the Problem.....	2
Significance of the Study.....	4
Statement of the Problem.....	8
Purpose of the Study.....	8
Research Questions.....	10
Assumptions.....	11
Delimitations.....	11
Definition of Terms.....	12
Summary.....	14
Organization.....	15
Chapter II: Literature Review.....	16
Theoretical Framework.....	16
Leininger's Culture Care Diversity and Theory Universality.....	17
Literature Review.....	20
Religion.....	21
Summary and Synthesis.....	24
Age.....	24
Summary and Synthesis.....	25

Gender.....	26
Summary and Synthesis.....	27
Country/Global Region of Origin.....	28
Summary and Synthesis.....	29
Ethnicity and Race.....	29
Summary and Synthesis.....	30
Marital Status.....	30
Summary and Synthesis.....	33
Number of Years Living in Host Country	33
Summary and Synthesis.....	35
Health.....	36
Summary and Synthesis.....	37
Summary and Synthesis of Literature Review.....	37
Gaps in Research.....	38
Chapter III: Methodology.....	40
Idaho Senior Refugee Interprofessional Holistic Health Project.....	40
Sample.....	41
Inclusion criteria.....	41
Exclusion criteria.....	42
Data Collection Methods.....	42
Ethical Considerations.....	42
Measures.....	43
Design.....	44

Variables.....	45
Data Analysis.....	46
Coding Data.....	49
Missing Data.....	51
Sample Size.....	52
Chapter IV: Results.....	53
Characteristics of the Sample Population.....	53
Associations Among the Demographic Variables.....	60
Age.....	60
Gender.....	62
Country of Origin.....	64
Race.....	67
Ethnicity.....	68
Marital Status.....	70
Association of Health Indicators.....	72
Associations between Years Living in the USA and Health.....	73
Associations Between Demographic Variables and Health when Categorized by	
the Number of Years Living in the Host Country.....	74
Gender.....	75
Marital Status.....	76
Country of Origin.....	78
Relationship between Gender and the Number of Years Living in the USA.....	79
Relationship Between Gender, the Number of Years Living in the USA, and	

Ethnicity.....	81
Ethnicity.....	83
Relationship Between the Number of Years Living in the USA and Age.....	84
The Number of Years Living in the Host Country.....	86
Age.....	86
Relationship Between the Country of Origin, Race, and Ethnicity.....	87
Country of Origin.....	89
Race.....	89
Summary of Findings.....	90
Missing Data.....	90
Statistical Power.....	91
Chapter V: Discussion.....	93
Introduction.....	93
Discussion.....	93
Study Sample and Generalizability.....	93
Research Question One.....	94
Research Question Two.....	96
Research Question Three.....	98
Research Question Four.....	99
Research Question Five.....	102
Research Question Six.....	103
Research Question Seven.....	105
Strengths and Limitations.....	107

Implications.....	109
Conclusion.....	110
Future Research.....	112
References.....	115

List of Figures

Figure 1: Leininger's Sunrise Model to Discover Culture Care.....	18
Figure 2: Dissertation Conceptual Model.....	19
Figure 3: Health-Related Quality of Life (HRQOL) Survey, Question 1.....	43

List of Tables

Table 1: List of Variables.....	44
Table 2: Variable Label Table.....	50
Table 3: Missing Data by Variable.....	51
Table 4: Demographic Characteristics for Age and Gender.....	53
Table 5: Demographic Characteristics for Country of Origin and Race.....	55
Table 6: Demographic Characteristics of Ethnicity, Marital Status, and Years Living in the USA.....	57
Table 7: Demographic Characteristics for HRQOL, Self-Rated Health, and Objective Health.....	58
Table 8: Demographic Characteristics for BMI, SBP, and DBP.....	59
Table 9: Cross-Tabulation Table for Age and Study Variables.....	61
Table 10: Chi-Square Test of Independence Between Age and Study Variables.....	62
Table 11: Cross-tabulation Table for Gender and Study Variables.....	63
Table 12: Chi-Square Test of Independence Between Gender and Study Variables.....	64
Table 13: Cross-Tabulation Table for Country of Origin and Study Variables.....	65
Table 14: Chi-Square Test of Independence Between Country of Origin and Study Variables.....	66
Table 15: Cross-Tabulation Table for Race and Study Variables.....	67
Table 16: Chi-Square Test of Independence Between Race and Study Variables.....	68
Table 17: Cross-Tabulation Table for Ethnicity and Study Variables.....	69
Table 18: Chi-Square Test of Independence Between Ethnicity and Study Variables.....	70
Table 19: Cross-Tabulation Table for Marital Status and Study Variables.....	70

Table 20: Chi-Square Test of Independence Between Marital Status and Study	
Variables.....	71
Table 21: Cross-Tabulation Table for Self-Rated Health and Objective Health.....	72
Table 22: Cross-Tabulation Table for Number of Years in Host Country, Self-Rated	
Health and Objective Health.....	73
Table 23: Chi-Square Test of Independence Between Number of Years in the Host	
Country and Health Variables.....	74
Table 24: Cross-Tabulation of Gender and Self-Rated Health When Categorized by	
Number of Years Living in the USA.....	75
Table 25: Cross Tabulation of Gender and Objective Health When	
Categorized by Number of Years living in the USA.....	76
Table 26: Cross-Tabulation of Marital Status and Self-Rated Health When Categorized	
by Number of Years Living in USA.....	77
Table 27: Cross-Tabulation of Marital Status and Objective Health When	
Categorized by Number of Years living in the USA.....	77
Table 28: Cross-Tabulation of Country of Origin and Self-Rated Health when	
Categorized by Number of Years Living in the USA.....	78
Table 29: Cross Tabulation of Country of Origin and Objective Health When	
Categorized by Number of Years Living in the USA.....	79
Table 30: Ordinal Logistic Regression Between Gender, Years Living in the USA,	
and Self-Rated Health.....	80
Table 31: Ordinal Logistic Regression Between Gender, Years Living in the USA, and	
Objective Health.....	81

Table 32: Ordinal Logistic Regression Between Gender, Years Living in the USA, Ethnicity, and Self-Rated Health.....	82
Table 33: Ordinal Logistic Regression Between Gender, Years Living in the USA, Ethnicity, and Objective Health.....	83
Table 34: Ordinal Logistic Regression Between Years Living in the USA, Age, and Self-Rated Health.....	85
Table 35: Ordinal Logistic Regression Between Years Living in the USA, Age, and Objective Health.....	85
Table 36: Ordinal Logistic Regression Between Country of Origin, Ethnicity, Race, and Self-Rated Health.....	88
Table 37: Ordinal Logistic Regression Between Country of Origin, Ethnicity, Race, and Objective Health.....	88

ABSTRACT

In Madeline Leininger's Culture Care Diversity and Universality Theory, she theorized that while the concept of health is universal, the meaning of health is defined by a person's culture. Culture contributes to health and lifestyle habits, but also can influence health-seeking behavior. Current research on refugee health has identified cultural factors such as religion, gender, country of origin, race, ethnicity, and marital status, that are associated with health. Research on refugee health has focused on the resettlement period, but little information is known about the association of cultural factors and health in an established refugee population. The purpose of this dissertation study was to look at how factors associated with culture as identified in Leininger's Sunrise Model influenced health with refugees based on the number of years the refugees lived in their host country.

This dissertation study was a descriptive, cross-sectional design which used secondary data of 110 participants to look at the association of demographic characteristics, such as religion, age, gender, country of origin, race, ethnicity, marital status, and the number of years refugees have been living in the country, and the health status of a senior refugee population.

The study found that refugees who had lived in the USA longer than two years reported better health than refugees who had lived in the USA less than two years for whom data was available. In contrast and contrary to expectation, age was not found to predict health in the study sample of senior refugees. This could be due to the fact that prior studies focused on the general population of refugees, but this investigation focused only on a population of senior refugees. Refugees that reported race as either Asian, Black or African American, or Hispanic or Latino reported poorer self-rated health than refugees that reported race as white, but race/ethnicity was not found to be associated with objective health. Consistent with the

Leininger Sunrise Model, this finding supports the idea that cultural factors influence people's health evaluations. The study variables: country of origin, ethnicity, and marital status, were not found to be associated with health, but all had missing data values that potentially biased the results. Missing data may be one reason the findings for these cultural factors did not align with the expectations of Leininger's Sunrise Model.

Chapter I

Introduction

Refugees are individuals who have left their country of citizenship because they have feared persecution due to their race, religion, nationality, social group, or political opinion and are unwilling or unable to appeal to their country of origin for protection due to fear (The UN Refugee Agency, 1967). Refugees are often associated with immigrants, but refugees and immigrants migrate for different reasons (Elwell, Junker, Sillau, & Aarard, 2014). While immigrants migrate illegally or legally to improve their economic situation or families' well-being; refugees move because of violence, persecution, or fear for their lives (Elwell et al., 2014).

The health of refugees begins in their country of origin (Diaz et al., 2015) where refugees may suffer from health problems endemic to their own country such as communicable diseases, chronic non-communicable disease, and mental health issues (Gurnah, Khoshnood, Bradley, & Yuan, 2011). When refugees reach the United States (USA) many of their health problems continue to be an issue because research has shown that refugees underutilize healthcare in their host country (Estad, 2016). Refugees have complicated medical histories, and a lack of early treatment makes caring for refugees challenging (Kumar et al., 2014).

Research on refugee health has focused on the resettlement period when refugees are settling into their new lives in their host country (Yun et al., 2012). There is a lack of research on the health of refugees after the resettlement period. This dissertation focused on a sample of senior refugees living in the USA. Finally, this dissertation study looked at how factors associated with culture as identified in Leininger's Sunrise Model may predict the health of refugees based on the number of years the refugees have lived in their host country.

Background of the Problem

In 2015, 59.5 million people across the world were displaced by war, creating the most significant refugee crisis since World War II. In 2015, approximately 70,000 refugees migrated to the USA (Marano, 2016). This dissertation study focused on senior refugees that settled in Idaho. Idaho has participated in refugee resettlement programs since 1975 when Governor John Evans created the Indochinese Refugee Assistance Program to respond to the increased needs of states to resettle refugees from Southeast Asia due to changing Southeast Asia governments (Idaho Office of Refugees, n.d.). Idaho initially focused on resettling refugees from Southeast Asia, but soon expanded to include other nationalities of refugees fleeing their country of origin (Idaho Office of Refugees, n.d.).

From 2008 to present, Idaho typically receives around 1,000 refugees per year. Refugees settle mainly in either Boise or Twin Falls (Idaho Office of Refugees, n.d.). Idaho bases the number of refugees that resettle in the state on the Proposed Refugee Admission, a report created by the United States Congress (The US Department of the State, 2016). The report recommends the number of refugees to be resettled in the USA every year (The US Department of the State, 2016). Idaho then works with multiple federal organizations to place refugees in Idaho (Idaho Office of Refugees, n.d.). In 2016, Congress approved the resettlement of 85,000 refugees in the USA, and Idaho settled 1,182 refugees or about 1% of the total refugees admitted to the USA (McClure Center for Public Policy Research, 2016).

Idaho accepts refugees from eighteen different countries, although the majority of refugees come from the countries of Bhutan, Iraq, Burma, Congo, and Afghanistan. These countries suffer from a range of diseases, but the US Department of Health and Human Services along with the CDC have identified priority health concerns that affect newly arrived refugees

from each country. Refugees from Bhutan suffer from anemia (20% of children under 15 and adults age 65 and older), vitamin B12 deficiency (60% of Bhutanese refugees who settled in the USA), and mental health issues (16 suicides among 49,0101 Bhutanese refugees since 2009), (US Department of Health and Human Services, 2014). Health concerns for Iraqi refugees include diabetes mellitus (514 of 18,990 Iraqi refugees screened), hypertension (33% of 13,299 Iraqi refugees screened with an additional 42% were pre-hypertensive), and malnutrition was reported for overall half of Iraqi women and children from the Iraqi Ministry of Health (US Department of Health and Human Services, 2014). Health concerns for Burma include Hepatitis B (54 of 1,746 screened) and intestinal parasites such as Ascaris, Trichuris, hookworm, and Giardia from unsafe drinking water (US Department of Health and Human Services, 2016). Health concerns for Congolese refugees include parasitic infections such as Strongyloidiasis and schistosomiasis, malaria (5 of 321 Congolese screened), mental health issues (1% of the 3,577 Congolese screened), and sexual and gender-based violence (40% of women and 24% of men according to a population-based survey of eastern Congo), (US Department of Health and Human Services, 2016). Health concerns for Afghan refugees are mental health issues, vitamin B12 deficiency, hepatitis B, and tuberculosis (ACT Government Health, 2011).

Idaho has created a diverse community of refugees with many different cultures. To understand refugee health, we need to understand a refugee's culture. Madeline Leininger defined health as "...a state of wellbeing that is culturally defined value, and practice, and which reflects the ability of individuals (or groups) to perform their daily role activities in a culturally expressed, beneficial, and pattern lifeways" (Leininger, 1991, p. 48).

In Madeline Leininger's Culture Care Diversity and Universality Theory, she theorized that while the concept of health is universal, the meaning of health is defined by a person's

culture (Leininger, 1989). Culture contributes to health and lifestyle habits (Simmelink, Lightfoot, Dube, Blevine, & Lum, 2013), which can influence health-seeking behavior (Odumukan et al., 2015). “Culturally-based care factors are recognized as influences on human care expressions, beliefs, and practices related to health, illness, and well-being or to face death and disabilities” (McFarland & Wehbe-Alamah, 2014, p. 4).

Leininger’s theory helps guide healthcare professionals to remember culture in understanding people and health (McFarland & Wehbe-Alamah, 2014). Culturally diverse communities can provide challenges to health care providers because the meaning of health and how someone feels about their health is influenced by their culture (Gurnah et al., 2011). To understand refugee health, it is important for healthcare providers to recognize how cultural factors influence health.

Significance of the Problem

Refugees suffer from physical health issues and psychological trauma associated with being a refugee (Lawrence & Kearns, 2005). Health care is often neglected because of the challenges of moving and settling into a new country (Lawrence & Kearns, 2005). In addition, refugees that settle in the USA might neglect their health care because the refugees don’t understand the healthcare system in the USA or mistrust the USA healthcare system (Elwell et al., 2014). Physical health problems involve communicable diseases like tuberculosis (TB), hepatitis, anemia, leprosy, parasites, malnutrition, and malaria (Lawrence & Kearns, 2005). Of the 56 million people that died in 2001, communicable disease accounted for one-third of those deaths, which were concentrated in low income to middle income countries in Asia and Africa (Lopez et al., 2006). Currently Idaho receives refugees from both Asia and Africa where communicable disease rates are high (Idaho Office of Refugees, n.d.).

Communicable diseases are more prevalent in refugee populations than in their host country's population because healthcare systems in their host country have collapsed due to war (Lawrence & Kearns, 2005). Some of these health issues are the result of living in their countries of origin (Lawrence & Kearns, 2005), and then prolonged stays in refugee camps where sanitation and healthcare are inadequate due to overcrowding, and inadequate infrastructure like sewage drainage systems (Lawrence & Kearns, 2005).

Besides communicable diseases, chronic non-communicable diseases are increasing in prevalence around the world (Lopez et al., 2006). Currently, chronic non-communicable diseases account for 61% of all health issues worldwide (Lopez et al., 2006). Chronic non-communicable diseases account for 60% of all deaths worldwide, and 46% of the burden of disease globally (Lopez et al., 2006). Yun et al. (2012) identified that newly arrived adult refugees have a higher prevalence of chronic diseases such as hypertension and obesity than the USA population because over half of their study population ($n = 180$) were diagnosed with at least one chronic non-communicable disease (Yun et al., 2012). About 45% of the USA adult population has been diagnosed with at least one chronic non-communicable disease (Yun et al., 2012). Hypertension and obesity are risk factors for multiple chronic diseases such as heart disease, diabetes, cancer, and stroke (Hinkle & Cheever, 2017).

Besides physical health issues, many refugees suffer from psychological trauma from past events in their home country (Gurnah et al., 2011). These traumatic events can lead to issues in mental health that refugees need help in overcoming (Gurnah et al., 2011). It is unknown exactly how many refugees have a mental illness like post-traumatic stress disorder (PTSD); however, refugees flee war-torn countries where many faced traumatic events such as torture, imprisonment, witnessing murder or combat, rape, and experience injury (Haldane &

Nickerson, 2016). These traumatic events increase the likelihood of PTSD or mental illness (Haldane & Nickerson, 2016).

Because of the high incidence of communicable and chronic non-communicable diseases in refugees, the Centers for Disease Control and Prevention (CDC) requires each refugee complete a medical screen for chronic, non-communicable, and communicable diseases (Marano, 2016). Local health departments follow up with refugees within 90 days of arriving in the country to complete the domestic medical examination, which includes screening for communicable diseases, acute and chronic non-communicable diseases. Primary physicians or local health departments follow up with domestic medical examinations (Centers for Disease Control and Prevention, 2013).

Idaho partners with resettlement agencies and programs to help refugees successfully acculturate into communities. Support includes cash assistance, employment services, case management services, English training, and medical assistance. This assistance lasts for eight months while the refugees are resettled into their new home (Idaho Office of Refugees, n.d.). After the resettlement period, refugees seek healthcare insurance like every other citizen or resident in the USA, either from their jobs, the healthcare exchanges, or they can apply for further federal assistance such as Medicaid. Refugees may live without insurance if they don't qualify for Medicaid and cannot receive coverage from work (Yun et al., 2012).

As refugees resettle into host country communities, they are introduced to the host country's cultural customs (Urquia & Gagnon, 2011). There is a gap in research regarding refugee health after the resettlement period. However, it is known that refugees continue to have poor health outcomes even after establishing themselves into host country communities (Wong et al., 2011). This study focused on senior refugees after their resettlement period to understand if

cultural factors such as religion, gender, country of origin, race, ethnicity, and marital status predicted health. “Knowledge of specific culture care values, beliefs, and lifeways of humans being within life’s experiences [is] held as important to unlock a wealth of new knowledge for nursing and health practices” (McFarland & Wehbe-Alamah, 2014, p. 5). This study looked at whether the selected cultural factors predicted health. Knowledge gained about how these cultural factors predict health could help healthcare providers create care plans that incorporate culturally specific care to senior refugees in my study population.

This study focused on cultural factors such as religion, gender, country of origin, race, ethnicity, and marital status (Salman & Resick, 2015). Culture is “the ideas, customs, and social behavior of a particular people or society” (Oxford Dictionary, 2016). Religion is a factor that influences culture can impact health behaviors, health discussions, and health treatment and care (Ussher et al., 2012). Ethnicity and gender (O’Mahony & Donnelly, 2012) also are associated with refugee health. Women report poorer health than men (Diaz et al., 2015). Literature is unclear as to why female refugees report poor health; however, qualitative studies focusing on the health of refugee women identified themes such as culture, religion, and ethnicity, along with poor health (O’Mahony & Donnelly, 2012; Salman & Resick, 2015).

Research has also shown that country of origin and ethnicity contribute to health outcomes regarding disease risk factors and health outcomes such as the likelihood of developing infectious or chronic diseases (Lopez et al., 2006). Previous research has identified characteristics, such as gender, religion, country of origin, and ethnicity, that are associated with health; however, the studies mentioned above showed that these characteristics are also related to one another (O’Mahony & Donnelly, 2012; Lopez et al., 2006; Salman & Resick, 2015). To understand how each characteristic influences health, it is important to study them all.

Statement of Problem

Limited information is known about refugee health after the resettlement period (Yun et al., 2012), except that refugees continue to report poor health outcomes (Diaz et al., 2015). Factors that create cultural customs and norms such as religion, gender, country of origin, race, and ethnicity certainly influence health and health-seeking behavior in newly arrived refugees (Salman & Resick, 2015). Because limited studies exist on refugee health after resettlement, how these factors are associated with the health of refugee populations that have acculturated is unclear.

Purpose of Study

Research on refugee health has focused on the refugee resettlement phase (Yun et al., 2012). Once refugees settle in host countries and adjust to the culture and lifestyle of host countries, refugees can begin to adopt the host countries culture in a process called acculturation (Urquia & Gagnon, 2011). Acculturation is the idea that immigrants start to blend their culture from the country of origin and the culture from their host country (Merriam-Webster, 2017). This blending of the refugees' country of origin culture and host country's culture can change the beliefs and practices regarding health because of acculturation (Urquia & Gagnon, 2011). Factors that once influenced the health of newly arrived refugees may not have the same level of influence. The purpose of this dissertation study was to look at how factors associated with culture as identified in Leininger's Sunrise Model are associated with the health of refugees, based on the number of years the refugees lived in their host country

Factors that this study investigated included, religion, gender, county of origin, race, ethnicity, marital status, the number of years living in the host country, and health. Previous qualitative research on refugee health has identified themes such as religion, gender, and

ethnicity all influence health (O'Mahony & Donnelly, 2012). The results of qualitative studies have often found that religion, gender, and ethnicity are linked, and currently, there is a gap in research to understand how each factor influences health. This study looked at the relationship between the factors, religion and gender, and the relationship between the factors, gender and ethnicity to better understand refugee health.

Age is linked to decreasing health outcomes (Diaz et al., 2015); as refugees acculturate they also age. This study looked at how years living in the USA and age both influenced self-rated health of senior refugees along with objective health indicators. The study also examined the influence of years of living in the USA when controlling for the age of the refugees in the senior population.

Research has shown that ethnicity, country of origin, and race are associated with health of newly arrived refugees (Hadgkiss & Renzaho, 2014). There is a gap in understanding of how these factors influence health for refugees that have lived in their host country for multiple years. This study assessed whether the country of origin, ethnicity, and race are associated with the health of refugees after their resettlement period.

In this study, health was assessed by looking at self-rated health and classified objective health based on indicators such as Body Mass Index (BMI) and blood pressure (BP). Research has been conducted on the concordance of self-rated health to disease conditions and mortality in senior populations (Mossey & Shapiro, 1982). Poor self-rated health was associated with poor objective health and mortality (Mossey & Shapiro, 1982). Mossey and Shapiro (1982) study helped researchers understand the association of self-rated health and objective health, and provided validation for researchers to use self-rated subjective health as a dependent variable because it was associated with objective health indicators such as mortality. No studies have

looked at the association of self-rated health and objective health in senior refugee populations. Understanding this association between self-rated health and objective health in refugee populations could provide researchers with an understanding of whether self-rated health could be a proxy for objective health in this study population.

Each of the studied factors in this dissertation could enhance healthcare providers' knowledge regarding senior refugee care and culture. Healthcare that incorporates culturally congruent decisions could lead to beneficial health outcomes because how medical care is given is based on what is important to refugees (McFarland & Wehbe-Almah, 2014).

Research Questions

1. What is the association between self-rated health as measured by question one of the Health-Related Quality of Life (HRQOL) survey, and objective health indicators as measured by BMI and blood pressure in refugee populations?
2. What is the association between years of living in the USA when categorized by years living in USA by decade and health of the refugees as measured by self-rated health and objective health indicators such as BMI and BP?
3. What are the separate associations between religion, gender, marital status, and country of origin to self-reported health as measured from the HRQOL survey question one and objective health indicators as measured by BMI and blood pressure, when examined by categories based on the number of years living in the USA?
4. What relationship does religion have on self-rated health as measured by question one of the HRQOL survey, and objective health indicators as measured by BMI and blood pressure, when gender and years living in the USA are controlled?

5. What relationship does gender have on self-rated health as measured by question one of the HRQOL survey, and objective health indicators as measured by BMI and blood pressure, when years living in the USA and ethnicity are controlled?
6. What relationship does years living in the USA have on self-rated health as measured by question one of the HRQOL survey, and objective health indicators as measured by BMI and blood pressure, when age is controlled?
7. What relationship does country of origin have on self-rated health as measured by question one of the HRQOL survey, and objective health indicators as measured by BMI and blood pressure, when ethnicity and race are controlled?

Assumptions

This dissertation addressed how demographic characteristics contributed to overall health. These assumptions were made in this study:

1. One assumption made in this study was that demographic characteristics contributed to overall health.
2. The second assumption was that factors that influenced health for refugees changed as refugee continued to live in host countries.
3. The third assumption was that refugees acculturated and blended their country of origin culture and the host country's culture over time.
4. The final assumption was that the senior refugees answered health questions truthfully and to the best of their knowledge.

Delimitations

Secondary data was used for this study because refugees are a vulnerable health population that can be hard to reach. A refugee population would not be a population that could

have studied by one researcher because of the expense of translators. Using an existing data set allowed this study to explore refugee health in a known population of senior refugees. However, because of the convenient sampling of the original study; findings from this dissertation study should not be generalized to a larger population of refugees.

Using secondary data also limited the variables examined. This study had to rely on variables that were collected for the original study. This study was based on Madeline Leininger's Culture Care Diversity and Universality theory; however, not all factors addressed in Leininger's theory were studied because the original study did not collect variables associated with them.

Definition of Terms

Acculturation is “cultural modification of an individual, group, or people by adapting to or borrowing traits from another culture” (Merriam-Webster, 2017). It is the “merging of cultures as a result of prolonged contact” (Merriam-Webster, 2017). In this dissertation study acculturation is the idea of blending or merging cultures over time.

Blood Pressure (BP) is the relationship of change in a body's arteries during contraction of the heart (Hinkle & Cheever, 2017). Blood pressure measures how hard the heart works to move blood, which contains oxygen and nutrients, to cells throughout the body (Hinkle & Cheever, 2017).

Body Mass Index (BMI) is an index for measuring health weight in individuals. Individuals with a BMI under 18.5 kg/m² are underweight and may be malnourished. Individuals with a BMI over 30 kg/m² are considered obese. Obesity is a risk factor for heart disease, cancer, and diabetes (Hinkle & Cheever, 2017).

Country of origin is the country of someone's birth or where they are from (Urquia & Gagnon, 2011).

Culture is "the ideas, customs, and social behavior of a particular people or society" (Oxford Dictionary, 2016). Culture can influence attitudes, behaviors, and actions with regard to health, health-seeking behavior, and healthcare.

Ethnicity is "the factor or state of belonging to a social group that has a common national or cultural tradition" (Oxford Dictionary, 2016).

Health is "the state of being free from illness or injury" (Oxford University Press, 2016). Health is the physical, emotional, mental, and spiritual well-being of an individual. "Attaining high levels of health has been described as a state when a person is free of discomfort and pain that permits one to function effectively within the environment" (Salman & Resick, 2015, p.1200).

Health is a state of well-being where individuals can perform their activities of daily living.

Healthcare professional is a professional working in the healthcare field who contributes to the care of patients.

Host country is the country where the migrant moves (Urquia & Gagnon, 2011).

Hypertension is high blood pressure above 140/80. Hypertension is a risk factor for stroke, heart attack, heart disease, and kidney failure (Hinkle & Cheever, 2017).

Immigration is "the action of coming to live permanently in a foreign country (Oxford University, 2016). The term immigrant thus describes the move relative to the destination" (Urquia & Gagnon, 2011, p. 467). Refugees are a subgroup of immigrants.

Length of time in country - the number of years someone has lived in a particular country (Urquia & Gagnon, 2011).

Migrant “is a person who moves from one place to another, especially in order to find work or better living conditions (Oxford, 2016). The move can be seasonal or temporary (Diaz, et al., 2015).

Migration is the “movement of people to a new area or country in order to find work or better living conditions” (Oxford Dictionary, 2016).

Quality of Life is “the standard of health, comfort, and happiness experienced by an individual or group” (Oxford University Press, 2016).

Self-rated Health is the opinion of an individual’s health or how an individual feels their health is. Perceived health in this dissertation study is measured from the HRQOL survey.

Refugee Refugees are individuals who have left their country of citizenship because they have feared persecution due to their race, religion, nationality, social group, or political opinion and are unwilling or unable to appeal to their country of origin for protection due to fear (The UN refugee Agency, 1967).

Religion is “the belief in and worship of superhuman controlling power, especially of personal God or gods” (Oxford Dictionary, 2016). Religion is also “a particular system of faith and worship” (Oxford Dictionary, 2016). Religious beliefs influence actions and behaviors regarding health and health-seeking behaviors (Lightfoot, Blevins, Lum & Dube, 2016).

Summary

“Leininger held that culture was the broadest, most comprehensive, holistic, and universal feature of human beings and care was predicted to be embedded in culture” (McFarland & Wehbe-Almah, 2014, p. 22). The cultural influences of newly arrived refugees and established refugees may be different thus changing their view on health. As refugees acculturate and become a part of host countries, factors that are associated with health may

change and be less of an influence on health. Researching factors that are associated with health in refugee populations will provide researchers and healthcare providers with a better picture of refugee health. Understanding the association between self-rated health and objective health indicators will also provide insight into refugee health and if refugees' self-rated health is in concordance with their objective health. This research helped develop a better understanding of whether selected cultural factors predicted health in an established refugee population.

Healthcare in the USA is becoming more challenging as the population becomes increasingly diverse. "All cultures have both different and similar patterns and ways to maintain health" (McFarland & Wehbe-Almah, 2014, p. 22), and understanding the association between cultural factors and health will help healthcare providers give cultural congruent care; this will benefit refugees because care will be tailored to meet their needs and beliefs (Leininger, 1991).

Organization

The first chapter of this dissertation introduced the topic of the study. The background of refugee health was discussed, along with the significance for this study of looking at demographic characteristics and health. A statement problem, purpose of the study, and research questions were also presented in Chapter one. Finally, chapter one discusses operational definitions for terms used throughout the rest of this dissertation study.

Chapter two of this dissertation study discussed the theoretical framework along with a literature review summarizing current research related to refugee health. Chapter three discussed the methodology for this dissertation study. Chapter four discussed the analysis of the data and the results of the analysis. Chapter five discussed the results of the analysis, the study findings, and recommendations for research.

Chapter II

Theoretical Framework

The purpose of chapter two is to discuss the theoretical framework used in this dissertation study. From the theoretical framework and the current literature, a conceptual model was discussed. The conceptual model portrays how demographic factors could be related to health. The critical analysis of the current literature focused on demographic factors such as religion, age, gender, country of origin, race, ethnicity, marital status, and the number of years living in the USA. Current gaps in the literature are discussed, followed by a synthesis of the chapter.

Madeline Leininger's Culture Care Diversity and Universality Theory

Madeline Leininger's Culture Care Diversity and Universality theory was developed because many healthcare professionals did not appreciate the role culture had in healing (McFarland & Wehbe-Alamah, 2014). Leininger identified that culture and care were missing from healthcare services (McFarland & Wehbe-Alamah, 2014). Culture is "seen as the blueprint for living, remaining healthy, and for dying" (Leininger, 1991, p. 36). All cultures have patterns of care that help to explain health and illness (Leininger, 1991). The concept of health is universal, but how people define health is individual and cultural (Leininger, 1988). Culture influences the concept of health and a person's idea of their own health (Leininger, 1988). Cultural backgrounds can provide insights into expectations regarding health and care (Leininger, 1988). As healthcare professionals, we care for every patient, but the patient's culture and background can affect their perception of health and the type of care we give. The relationship of health and culture are interwoven (Leininger, 1988).

Madeline Leininger's Cultural Care Diversity and Universality Theory developed as a result of the need to explain how culture affects the health of patients, and in turn, the kind of nursing care they need (Leininger, 1988). Caring is universal, but culture can influence the meaning, expression, or pattern of caring to restore health (Luna, 1994). Because health is influenced by cultural and individual factors, there is a need to understand which factors influence health for refugees after the resettlement period.

“Cultural care values, beliefs, and practices are influenced by and tend to be embedded in the worldview, language, religious, kinship, political, educational, economic, technological, ethnohistorical, and environmental context of a particular culture” (Leininger, 1991, p. 45). Leininger depicted the relationship between cultural and global factors in the Sunrise Model (Leininger, 1988). Concepts in the Sunrise Model influence care patterns and individual health. They include global factors such as technological factors, religious and philosophical factors, kinship and social factors, cultural values and lifeways, political and legal factors, economic factors, and educational factors (Leininger, 1988). To provide quality care, health professionals need to understand how each concept relates to the other global factors, and their patient's health. When these concepts are not understood, or understood differently by the patient and health professional, it can lead to unanticipated health outcomes (Luna, 1994). Figure 1 presents Leininger's Sunrise Model.

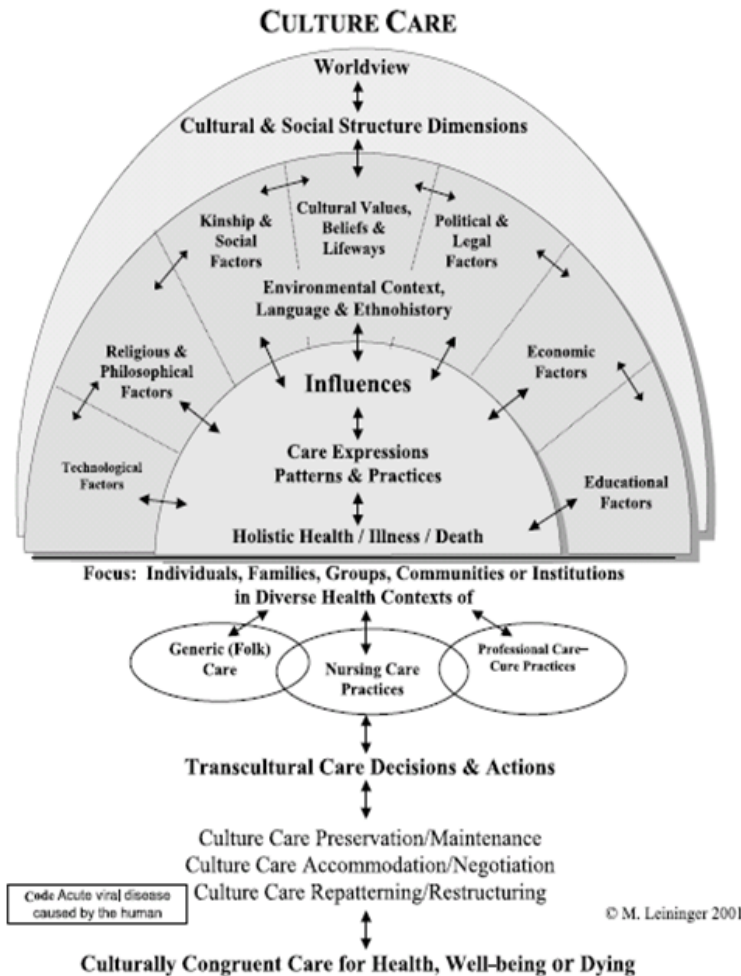


Figure 1. “Madeline Leininger’s Sunrise Enabler to Discover Culture Care” by Madeline Leininger. Copyright 2001 by Madeline Leininger from <http://www.madeline-leininger.com/cc/sunrise.pdf>. Available under a Creative Commons Attribution 4.0 International License.

“The Sunrise Model helps the researcher envision a cultural world of different life forces or influencers on human conditions which need to be considered to discover human care in its fullest ways” (Leininger, 1991, p. 49). It is used as a guide for researchers to explore global factors that have the potential to influence culture and health (McFarland & Wehbe-Alamah, 2014). A conceptual model using Leininger’s Sunrise Model design was created first, because not all factors that influence culture and health could be studied from Leininger’s Sunrise Model

because this study used secondary data. Variables for factors including technology, education, and socio-economic status were not collected in the original main study and therefore were not examined in this study. Secondly, because not all global factors could be studied in this dissertation, a conceptual model was created for this study based on the Sunrise Model, but included factors that current research on refugee health had identified as having the potential to influence health such as religion, gender, country of origin, race, ethnicity, marital status, and the number of years living in the host country. Figure 2 presents this dissertation's conceptual model.

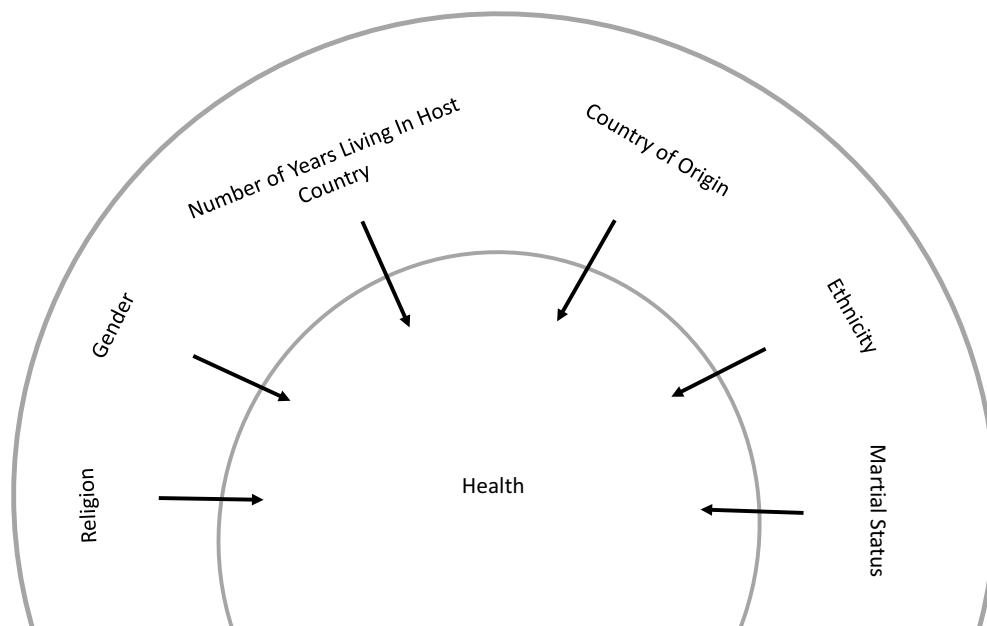


Figure 2. "Dissertation Conceptual Model"

Leininger's (1988), theory focuses on promoting health and well-being by using beliefs and practices from the patient's culture. The Sunrise Model depicts global factors that may influence health, while this dissertation's conceptual model identified factors from the larger

global factors of Leininger's Sunrise Model that influence health based on the current research. Leininger believes that care and health are defined by culture (Leininger, 1988), so it is important for researchers to understand how cultural factors influence health. The health of individuals determines whether or not they seek care (Leininger, 1988).

Leininger's theory identifies factors that influence health. Newly settled refugees' health and health-seeking behaviors are influenced by their country of origin. How refugees blend their culture from their country of origin and how this blended culture influences health is not understood. This dissertation study looked at how the number of years living in the USA influenced health based on factors identified from Leininger's Culture Care Diversity and Universality Theory. The literature review in this dissertation study specifically looked at whether factors from the dissertations conceptual model such as religion, age, gender, country of origin, race, ethnicity, marital status, and the number of years in host country are associated with measures of health for an Idaho refugee population.

Literature Review

A computerized search of multiple health databases in the spring of 2017 was conducted to identify articles related to refugee health. Searched databases and Internet sources included: Cumulative Index to Nursing and Allied Health Literature (CINAHL), SocINDEX, and PsycINFO. Search criteria included current literature, studies from the United States or international studies published in English between 2001-2017, that were meta-analyses, systematic reviews, practice guidelines, and research studies related to health and refugees.

Search terms were selected from factors that influence culture and health. Search terms included: *ethnicity, lived experience, social acceptance, marriage, marital status, social support, health, perception of health, health perception, religion, gender, culture, host country,*

health disparity, refugee health, refugee. The search terms: ethnicity, social acceptance, lived experience, marriage, marital status, social support, religion, gender, and culture were each separately combined with refugee health, to identify research that assessed how cultural aspects can influence refugee health. Search terms host country and refugee health were combined to assess how refugee health differed from the health of the host countries population. Perception of health and health perception were also separately combined with refugee health to review studies of how refugees view their own health.

The literature search in CINAHL with the above-mentioned search terms, identified 674 articles, SocINDEX identified 1,190, and PsycINFO identified 1,112. After removing duplicates, article titles were read. Articles that didn't specifically mention refugee health or demographic factors of a refugee person's culture in the title were excluded, which resulted in 294 articles. Next, article abstracts were read. Again, articles were excluded if refugee demographic factors were not studied. This resulted in 75 articles. The remaining 75 articles were read and included in this literature review if demographic factors were studied in a rigorous study design with a detailed methods section and limitations explained. Finally, references were reviewed from articles that met all inclusion criteria to include well-known studies published before 2001, which was one article, included in this literature review. As a result, 28 articles met inclusion criteria for this literature review. These included 11 quantitative articles, 12 qualitative articles, three literature reviews, one article brief, and one nursing education article.

Religion

Religion is one factor that Leininger theorizes influences health because religion is embedded in the culture of every community (Leininger, 1988). Religious, cultural customs, and norms determine choices people make on a daily basis (Pinter et al., 2016). While all refugees

may not be, religious or practice their religion the same way, it is important to be aware of how religion influences culture. A qualitative study of the 49 Somali and 27 Oromo refugees in Minnesota found that religion is an important aspect of life (Lightfoot et al., 2016). One participant mentioned that Islam tells him how to live his life (Lightfoot et al., 2016). Another participant said that religion values health, so she values her health (Lightfoot et al., 2016). Also, a qualitative study of 15 African refugees in Minnesota stated that health and sickness were related to God because they were in “God’s Hands” (Simmelink et al., 2016).

A nursing education article reviewing Muslim women and nursing implications identified modesty as a fundamental value discussed in the Quran (Mujallad & Taylor, 2016). The participants also mentioned cultural healing traditions such as food and herbal remedies used back home to treat and prevent illness (Simmelink et al., 2013). Somali refugees indicated that certain foods are used to prevent and treat disease (Lightfoot et al., 2016). These studies discuss how religious practices influence behaviors that are associated with health and care (Lightfoot et al., 2016; Simmelink et al., 2013).

A qualitative study of 42 Karen and Assyrian women refugees in Australia found that sex and family planning are also influenced by religion (Ussher et al., 2012). Sexual and reproductive health issues are an important aspect of women’s health. However, these services are underutilized by refugee populations (Ussher et al., 2012). Cultural and religious views lead to underutilization of reproductive health services because many cultures consider it disrespectful to discussing sexual health issues, resulting in health concerns and information not being discussed with family and healthcare providers (Ussher et al., 2012).

The issue of modesty in Muslim refugees also prevents the use of reproductive health services because there is a need to keep a body covered when in the presence of non-Muslim men

and women. The exposure of the body from the navel to knees is also prohibited, making a reproductive exam difficult (Mujallad, & Taylor, 2016).

When health issues with sexual and reproductive health concerns do come up, women may feel uncomfortable discussing these matters with providers (Gurnah et al., 2011). A qualitative study of 14 Somalia Bantu woman in Harford Connecticut, found that even with interpretation services, refugees still could not communicate issues to providers regarding reproductive health because of gender issues with providers and translators (Gurnah et al., 2011).

A quantitative study of 50 female Somali refugees in a Midwest city in the United States reported problems with male providers providing physical breast, abdomen, and pelvic examinations (Odumukan et al., 2015). Male interpreters also caused concern for female Somali refugees (Odumukan et al., 2015). Religious and cultural norms created a barrier where female Somali women felt uncomfortable with parts of the physical exam to the point where women did not want to go to a provider or bring up health issues (Odumukan et al., 2015). If a patient didn't bring up sensitive issues, they may not get the care they needed (Gurnah et al., 2011), which could affect their overall health.

For the refugee population, sexual and women's health issues are still a health concern for aging refugee women (Ussher et al., 2012). As women's bodies age, sex, and other women's issues are affected, including menopause (Hinkle & Cheever, 2017). If refugee women did not see a health care provider during their reproductive years (Ussher et al., 2012), it creates a pattern where refugee women may not see a healthcare provider regarding women's health issues like sexual health or menopause later in life. These studies looking at women and gender issues support Leininger's Culture Care Diversity and Universality theory because religious and cultural values, customs, and beliefs influence health-seeking behavior.

Summary and Synthesis. The studies mentioned above explore how religious practices create a culture that influences health choices in newly arrived refugees (Lightfoot et al., 2016; Gurnah et al., 2011; Odumukan et al., 2015; Simmelink et al., 2013; Ussher et al., 2012). These studies also identify themes of gender and religious culture when refugee health is studied (Gurnah et al., 2011; Odumukan et al., 2015; Simmelink et al., 2013; Ussher et al., 2012). What is unclear is the level of influence religion has on self-reported health and objective health in a refugee population. From these studies, the level of influence religion has on health is also unclear, because gender is a confounder. This study looked at how religion, a cultural and social factor as identified in Leininger's Sunrise Model, influenced health in senior refugee populations while controlling for the number of years' refugees live in their host country and gender. These two variables need to be controlled for because gender is a common theme identified in qualitative studies when looking at religion and health. This dissertation study looked at whether religion continues to be a factor that influenced health in senior refugee population based on the number of years living in the USA.

Age

While age is not a factor in Leininger's Culture Care Diversity and Universality Theory, it is an important factor to control for in this study, because when studying a senior population age influences health, it is important to control for age to understand health. Age has long been associated with health, with older individuals reporting more health problems or lower levels of perceived health. A study conducted by Yun et al. (2012), assessed non-communicable or chronic diseases among a newly arrived refugee population. The study population mean age of 45 is slightly younger than the US adult population but found that one in five adult refugees had at least one chronic disease (Yun et al., 2012). The most common chronic diseases reported

were behavioral health problems, such as depression, post-traumatic stress disorder (PTSD), and hypertension (Yun et al., 2012). This finding indicates that chronic diseases in refugees to the USA are comparable or higher than the general population of the USA (Yun et al., 2012). Chronic diseases are not curable and do affect health as people age. Finding that the rate of chronic disease among refugees is comparable to or higher than the USA population is concerning because unmanaged chronic diseases severely affect health status (Yun et al., 2012). Diaz et al. (2015) also found that the association between age and multimorbidity was higher for women, regardless of migration classification.

In another study, conducted by O'Mara (2014), barriers in healthcare in elderly refugee populations were shown to be similar to younger refugees. The barriers included language, transportation, culture, and healthcare misunderstanding (O'Mara, 2014). Even though the barriers to healthcare access for refugees can be universal, the elderly usually report more health issues due to age and increased development of chronic diseases (Diaz et al., 2015).

As refugees age, their health may decline like other older populations. Yun et al. (2012) linked refugees living in the USA to higher levels of chronic diseases than the general population of the USA, and Diaz et al. (2015) linked multimorbidity to migrants and age. The longer a refugee lives in a host country, the more he or she accesses healthcare (Elstad, 2016), which could be due directly to the relationship of age with the health of refugees (Elstad, 2016). Alternatively, this could be due to a greater understanding of the USA healthcare system from years living in the USA.

Summary and Synthesis. From the reviewed studies, it is unclear if the number of years lived in a host country positively influences the health of senior refugees. Instead of looking at the direct relationship of age to the health of a senior refugee population, this study looked at the

level of influence years lived in the USA had on self-reported health, and objective health while controlling for age. One purpose of my study was to determine the association of the number of years living in the USA and health regardless of the age of refugees.

Gender

Biological and behavioral differences between men and women affecting health were identified from a literature review (Regitz-Zagrosek, 2012). Worldwide, women live longer than men (Ostan et al., 2016). This difference in lifespan is a combination of biological sexual characteristics such as hormones, anatomy, and reproduction functions, and social factors such as behaviors, lifestyle, and social roles (Ostan et al., 2012). Diaz, et al. (2015) found that the association between age and multimorbidity was higher for refugee women than men. Even though women tend to live longer than men, they have a lower quality of life in advanced age than men (Ostan et al., 2012). This lower quality of life is due to degenerative diseases (Ostan et al., 2012). These findings support the research finding on refugee health and gender discussed below.

A quantitative study of 91 refugees in Sydney Australia, looked at psychological disorders and trauma differences between men and women in refugees and asylum seekers (Haldane & Hickerson, 2016). The study found that refugee women report more psychological symptoms such as anxiety and post-traumatic stress for interpersonal trauma, even though men experienced more interpersonal trauma (Haldane & Nickerson, 2016). This finding was attributed to gender stereotypes because men do not report mental disease to avoid appearing weak (Haldane & Hickerson, 2016).

Another Haldane & Hickerson (2016) finding was the association of gender, health, and culture. When studying gender and health in qualitative studies, themes regarding culture,

(Ussher et al., 2012), religion (Saadi, Bond, & Percac-Lima, 2015), and marriage relationships (O'Mahony & Donnelly, 2012) also were identified. These qualitative studies focus more on women's health in part because women report poorer health or worse quality of life.

A qualitative study conducted in Boston assessed barriers to breast cancer screening in 57 Bosnian, Somalia, and Iraqi refugee woman (Saadi et al., 2015). One cultural barrier was an inattentiveness to personal health in women (Saadi et al., 2015). Ussher et al. (2012) also found that women were inattentive to their needs because they would leave issues, such as health or reproductive issues, until other family needs were met. Women prioritize needs based on the family, and often women's needs are met last (Ussher et al., 2012). Studies related to gender discuss how gender influences health because of both biological factors (Diaz et al., 2015; Haldane & Nickerson, 2016; Ostan et al., 2016), and social cultural factors (Saadi et al., 2015; Ussher, et al., 2012).

Summary and Synthesis. The studies in this section discuss how gender influences health because of both biological factors (Deiaz et al., 2015; Haldane & Hickerson, 2016; Ostan et al., 2012), and cultural social factors (Saadi et al., 2015; Ussher, et al., 2012). Gender is often identified with other cultural, and social factors from Leininger's Sunrise Model, such as religion and family and social factors (Leininger, 1988). In refugee populations, the influence gender has on health is unclear, because it is often linked to other cultural factors. My dissertation study assessed how gender influenced health when factors such as religion and ethnicity were statistically controlled. By controlling for variables such as religion and ethnicity, this study tried to determine if gender plays a significant role in influencing health of a senior refugee population, and whether or not women in this population report poor health in accordance with the studies conducted by both Diaz et al. (2015) and Ostan et al. (2012).

Country/Global Region of Origin

Madeline Leininger's (2001) Sunrise Model shown in Figure 1, depicts that lifestyle and economic factors influence health. Infrastructure, the economy, and political factors in a person's country of origin create a person's lifestyle that can affect health and health beliefs (Lopez et al., 2006). The global regional burden of disease is calculated every ten years using the global population health data and identifies who is dying, as well as causes of death by global region (Lopez et al., 2006). Currently, infectious diseases are more common in low-income and middle-income countries than in high-income countries, while chronic diseases are increasing in every country of the world (Lopez et al., 2006). Low-income and middle-income countries have a higher disease burden than high-income countries (Lopez et al., 2006). One reason the disease burden is higher in low-income and middle-income countries is that healthcare infrastructure does not meet the needs of the population (Lopez et al., 2006). Depending on the country, the burden of disease varies, but the country someone is born into and lives in can predict general health (Lopez et al., 2006).

A quantitative study of 490 Cambodian refugees in California found that Cambodian refugees had poorer health when compared with other Asian American and Pacific Islanders, even when these Cambodian refugees had resettled in the USA more than two decades ago (Wong et al. 2011).

A study in the USA looked at the association of newly arrived refugees' country of origin and health (Yun et al., 2012). Obesity was found to be more common among Iraqi refugees upon arrival to the USA than any other refugee country studied (Yun et al., 2012). Elstad (2016) found hospitalization rates upon the arrival of refugees to the USA varied by global region of origin. Refugees from West and South Africa were hospitalized more than refugees from east

Eastern Europe and Asia (Elstad, 2016). As refugees continue to live and create lives in their host country, it is unclear if the country of origin continues to play a factor in health.

Summary and Synthesis. As refugees continue to live and create lives in their host country, it is unclear if the country of origin continues to play a factor in health, or if refugees adopt the host country's view of health. There is a need to understand how the number of years refugees live in the USA influences health, and whether refugees' health is still influenced by their country of origin lifestyle.

Ethnicity and Race

Along with country of origin, culture norms, beliefs and lifestyle as depicted in Leininger's Sunrise Model (2001) can be developed by ethnicity and race, because race and ethnicity are more of a social category than a biological one that identifies culture and socioeconomic factors. "There is a biological aspect to race, but there is more genetic variation within races than between, and racial classifications schemes do not represent biological distinctiveness" (Williams, 1994, p. 262). Even though race and ethnicity are more social categories than biological ones, they do influence health (Williams, 1994). A systematic review of refugee literature conducted by Hadgkiss and Rexzaho (2014) found that ethnicity influenced health. However, they were unable to compare the health of ethnic groups because of complex sampling and methodological differences between studies both qualitative and quantitative designs (Hadgkiss & Rexzaho, 2014).

When looking at the country of origin, race, and ethnicity in refugee health research, country of origin has also been shown to more closely be associated with health than ethnicity for refugees (Wong et al., 2010). The reason for this is because health can vary for ethnic groups in different countries (Wong et al., 2010). A study found that Cambodian refugees had poorer

health when compared with other Asian American and Pacific Islanders (Wong, et al., 2010) even when these Cambodian refugees had resettled in the USA more than two decades ago (Wong et al., 2010).

The study conducted by Wong et al. (2010) identified the limitations of using the variable ethnic group as a variable to predict health, because ethnicity may not be as specific as the country of origin. One ethnicity may include people from many different countries (Wong et al., 2010).

Summary and Synthesis. While the above-mentioned studies have determined that health varies by country of origin and ethnicity in refugee populations (Lopez et al., 2016), and research studies have identified that country of origin predicts health, it is unclear how long the refugee's country of origin continues to influence health once refugees have resettled into their host country. This study looked at whether the number of years living in the USA mitigate factors such as cultural values, beliefs, and lifeways described in Leininger's Sunrise Model by looking at whether the number of years living in the USA influenced health when ethnicity and race were controlled.

Marital Status

In Madeline Leininger's Culture Care Diversity and Universality Theory, kinship and social factors are one cultural and social factor that influence health (Leininger, 1988). The kinship relationship this study will look at is marriage, and how the marriage relationship influences health (Leininger, 1988). Married people report better health than unmarried people (Department of Health and Human Services, 2007). When specifically looking at seniors, unmarried seniors report poorer health, and they also have a higher risk of mortality than married

seniors. This difference in health is seen more in unmarried senior men (Robards, Evandrou, Falkingham, & Vlachatoni, 2012).

Diaz et al. (2015) also assessed how marriage influences the health of immigrants. They found that registered immigrants who had never been married had the lowest odds of multimorbidity, although they were also younger than other migrants in the study because they had migrated for education (Diaz et al., 2015). Diaz et al. (2015) found that migrants who were married had the second lowest odds of multimorbidity, while immigrants who were separated, divorced, or widowed had the highest odds of multimorbidity. Age was a confound when the relationship between health and marriage was analyzed (Diaz et al., 2015); the unmarried migrants were younger, and age is associated with health (Diaz et al., 2015). Younger individuals usually report better health than older individuals (Diaz et al., 2015).

Marriage can affect health in multiple ways, such as improving economic well-being, with two incomes, which may enhance health outcomes because of access to healthcare due to economic status (Department of Health and Human Services, 2007). Marriage can also provide an emotionally fulfilling relationship that improves both physical and mental health (Department of Health and Human Services, 2007). Finally, spouses in a relationship may provide support and encouragement, which can affect health and behaviors (Department of Health and Human Services, 2007). Unchino (2009) found spousal support was associated with lower rates of morbidity and mortality.

Older populations and marriage have been studied because older couples share many of the same lifestyle and environment exposures that can influence health (Ryan, Wan, & Smith, 2014). Older couples have also had a chance to grow and learn how to support one another,

which impacts spousal relationships and is one benefit of health related to marriage (Unchino, 2009).

Ryan et al. (2014) conducted a study of elderly couples, age 51 and older, looking at the association of spousal support and perceived health. The study found that couples who reported higher levels of support from their spouses were associated with higher levels of self-rated health (Ryan et al., 2014).

Ryan et al, (2014) also found that couples with strained marriages and no support from their spouses reported lower self-rated health. The study also found that couples who had relationship troubles had lower self-rated health scores (Ryan et al., 2014).

O'Mahony and Donnelly (2012), found that not all marriages are healthy. When studying health, O'Mahony and Donnelly (2012) found that marriage can create unequal hierarchies and unequal power in marriages. Refugee women in Canada spoke of tumultuous relationships with their spouses, and how relationship, power, and control influenced their health (O'Mahony & Donnelly, 2012). Spouses who were emotionally or physically abusive to their partner controlled health choices and health-seeking behaviors of the other spouse, affecting the overall health of their partners (O'Mahony & Donnelly, 2012).

Together, these studies indicate marriage can have both a positive and negative effect on health as theorized by Leininger's Culture Care Diversity and Universality Theory and Sunrise Model presented in Figure 1. Health professionals need to understand how kinship relationships like marriage can influence health in senior refugee populations. Research shows that marriage relationships in seniors have a positive impact on health, especially for men (Robards et al., 2012).

Summary and Synthesis. Marital status and the quality of marriage influence health (Diaz et al, 2015; O'Mahony & Donnelly, 2012; Ryan et al., 2014); however, this study only assessed marital status, not the quality of marriage. This study addressed how marital status influenced a senior refugee population, and whether marital status predicted the self-report health and objective health in a senior refugee population. Understanding the role marriage plays in influencing health in senior refugee populations will help providers have a clear picture of what health means to them and how marriage contributes to health.

Number of Years Living in Host Country

A quantitative study that included 67,398 refugees in Norway used national health databases to assess health with refugees being one classification in the study (Diaz et al., 2015). Multimorbidity, the diagnosis of more than one chronic disease, was used as the dependent variable evaluating refugee health (Diaz et al., 2015). Diaz et al. (2015) dichotomized years living in host country to less than five years and five years or longer. The study found the multimorbidity doubled for refugees who lived in Norway longer than five years (Diaz et al., 2015). This study found that refugees had higher levels of multimorbidity than the population of the host country Norway (Diaz et al., 2015).

The length of stay in the host country is an important predictor of health. It has been found that longer stays in host countries correlate with worsening health even when age is controlled for (Diaz et al., 2015). One hypothesized reason for the worsening health conditions of long-term migrants was the utilization of healthcare services (Diaz et al., 2015). Upon arriving in host countries, healthcare utilization was low because migrants were unfamiliar with the healthcare system. With increased duration of stay in a host country, health care utilization also increased (Estad, 2016). Another study in Norway assessed migration and hospital stay

through hospital databases (Estad, 2016). This study found that refugees new to Norway had higher hospitalization rates, but this decreased with length of stay. Estad (2016) attributed this finding to the fact that refugees are exposed to multiple health risks pre-migration; these health risks may require immediate treatment, resulting in hospital stays (Estad, 2016). This study only looked at hospitalization, not outpatient care utilization, so understanding how refugees access all levels of health care could not be fully understood (Estad, 2016).

A longitudinal study conducted in Australia looked at the differences in health between migrants and native Australians over time (Jatrana, Pasupulitei, & Richardson, 2014). Jatrana et al. (2014) found that over time, migrants' reporting of chronic conditions were lower than native-born Australians. This finding supports the healthy migrant effect (HME) hypothesis, which implies that migrants are healthier than non-migrants because health is a criterion for selection during the immigration process (Norredam et al., 2014). Jatrana et al. (2014) discuss how it is unclear whether the migrant population is healthier and thus report fewer chronic diseases, or if they don't utilize health care and report fewer chronic diseases. Jatrana et al. (2014) studied migrant populations, not refugees specifically. How refugee health fits into the HME hypothesis is also unclear.

A quantitative study including 43,992 refugees conducted in Denmark specifically looked at refugee populations length of time in the host country and chronic disease over time (Norredam et al., 2014). The authors found that refugees had lower hazard ratios for heart disease, cancer, and stroke, but after five years in the host country, the hazard ratios increased (Norredam et al., 2014). The hazard ratios for infectious disease for refugees were high, regardless of duration in the host country (Norredam et al., 2014). Refugees' poor health upon arrival to the host country continues to decline with length of duration living in host countries

(Norredam et al., 2014). The contributory results between Norredam et al. (2014) and Jatrana et al. (2014) may be explained by host country selection processes and why individuals migrate.

A cross-sectional quantitative study in Denver, Colorado assessed 120 refugees' general health and barriers to care (Elwell et al., 2014). The study looked at the number of months refugees had lived in the USA. The categories were under three months, three to eight months, and longer than eight months (Elwell et al., 2014). For refugees that had lived in the USA for three to eight months, eleven (40.7%) refugees reported that their health was very good or excellent. Seventeen (63%) refugees who had lived in the USA longer than eight months reported good or fair health (Elwell et al., 2014). Elwell et al. (2014) did not control for refugees age but of the 120 refugees surveyed 108 were between the ages of 18 to 45. Elwell mentions that Federal resettlement stops after eight months, so this could be one reason why refugees who have lived longer in the USA reported a slightly lower level of health (Elwell et al., 2014).

Slightly more than half of the refugees surveyed stated they had utilized some form of healthcare services in the last six months (Elwell et al., 2014). The study also found that healthcare utilization increased with duration of stay in the host country. Despite this, over half of the refugees responded that not knowing where to go prevented them from seeking care (Elwell et al., 2014). Finally, the study found that an adverse experience with healthcare either before or after entering the USA kept many refugees from seeking any form of healthcare (Elwell et al., 2014).

Summary and Synthesis. The findings suggest that refugees access tertiary care, hospital or specialized care, the longer they live in the host country (Estad, 2016). However, refugees still report lower levels of health than the host country's population (Norredam et al., 2014). More information regarding refugee health is needed to understand why refugee health

continues to be worse than the host country's population. None of the studies mentioned above looked at how refugees' culture influences health with longer durations living in host countries. This dissertation looked at how factors associated with culture as identified in Leininger's Sunrise Model influenced health with refugees based on the number of years refugees live in their host country.

Health

Madeline Leininger's Culture Care Diversity and Universality Theory was created to understand health and how factors that make up culture influence health (Leininger, 1989). Not only must researchers understand factors that lead to health, but researchers must also understand the meaning of health. Health is an individual concept because health is determined by objective health indicators like disease diagnosis, but also feelings about health (Salman & Resick, 2015). To understand the meaning of health, it is important to understand the association between objective health measures and feelings about health identified from self-reported health. A systematic review by (Hadgkiss & Renzaho, 2014), looked at health and refugees and found that the variable of health was measured by various means. Eight articles used self-reported health status, while ten articles looked at medical records and clinical databases to measure health (Hadgkiss & Renzaho, 2014). Self-rated health scores or objective health data were being used in research as dependent variables to study health outcomes in refugee populations (Hadgkiss & Renzaho, 2014).

A study conducted in Canada looked at the self-reported health of older adults and mortality (Mossey & Shapiro, 1982). The study included 3,128 persons who filled out a survey asking a self-reported question regarding their health (Mossey & Shapiro, 1982). The question asked was, "For your age would you say, in general, your health is excellent, good, fair, poor or

bad?” (Mossey & Shapiro, 1982, p. 801). Objective health variables were identified through medical health claims (Mossey & Shapiro, 1982). Finally, mortality was assessed through death registries (Mossey & Shapiro, 1982). Mossey and Shapiro (1982) found that the odds for death were higher among individuals who self-reported poor health. This study found that self-reported health scores were associated with mortality independent of objective health status (Mossey & Shapiro, 1982). The study was on study that provided validity evidence in support of the use of self-rated health status, because there was an association between self-rated health and mortality in an older population (Mossey & Shapiro, 1982).

Summary and Synthesis. No studies have looked at the relationship between self-reported health and objective health in a senior refugee population. One purpose of this study was to determine the association of self-reported health and objective health among a population of senior refugees living in Idaho, to understand if self-reported health was in concordance with objective health indicators. Understanding the association between objective health and self-reported health, along with factors that influence health described in Leininger’s Sunrise Model, can give healthcare providers a more complete picture of refugee health and which factors are important to their health.

Summary and Synthesis of Literature Review

Madeline Leininger’s Cultural Care Diversity and Universality Theory and her sunrise model presented in Figure 1 depict how cultural and social factors such as technological factors, religious and philosophical factors, kinship and social factors, cultural values, beliefs, and lifeways, political and legal factors, economic factors, and educational factors influence health. The above literature review discussed research that focused on refugee health and the association of some of Leininger’s cultural and social factors with variables such as religion, gender, marital

status, ethnicity, race, and country of origin. These multiple factors were found to be associated with the health of refugee populations. These factors are also associated with each other, so understanding the influence a specific demographic factor has on health is challenging. As refugees adjust to living in the USA and as they age, understanding their health in relation to cultural and social factors mentioned in Leininger's Sunrise Model is an important step in providing healthcare. As healthcare providers, we will continue to see an increasingly diverse population of patients. Understanding how the number of years living in the USA impacts factors that influence health will help providers understand factors that influence the perception of health and actual health of a refugee population in Idaho.

This study helped add to the body of refugee health research by understanding the association of refugees' self-evaluations of their general health and objective health indicators. This study also assessed if longer duration of living in host country changes health outcomes for seniors in a refugee population. Finally, this study looked at the association between perceived and actual health of seniors in a refugee population. Knowledge gained from this study's research questions will help healthcare providers understand how years living in the USA may impact cultural and social factors that influence health. This knowledge will provide more information regarding health and the meaning of health for refugee populations, and how refugees acculturate into the USA. A deeper understanding of refugee health will allow providers to develop programs that incorporate cultural and social factors that influence health to better care for refugees regardless of where they came from or when they came to the USA.

Gaps in Research

The factors of religion, age, gender, country of origin, race, ethnicity, marital status, and the number of year living in the host country were associated with health within refugee

populations. These demographic characteristics can also overlap when influencing health. Determining how one factor influences health is impossible without controlling for the other demographic factors. Most studies assessing refugee health look at refugees during the resettlement phase of care, usually the first eight months of arriving in host country. As refugees adjust to living in their host country, do their demographic characteristics continue to predict their overall health in the same way? There are limited studies looking at refugee health in the post-resettlement phase, and how demographic factors influence refugees as they age in their host country.

Chapter III

Methodology

The purpose of this chapter is to discuss the methodology used to look at how demographic characteristics such as age, gender, marital status, race, religion, country of origin, and the number of years living in the host country relate to the overall health status of a senior refugee population measured by self-rated health, and objective health indicators such as BMI and BP. Previously collected data from the Idaho Senior Refugee Interprofessional Holistic Health Project was utilized for this study. This section discusses the Idaho Senior Refugee Interprofessional Holistic Health Project, study research design, assumptions, delimitations, sampling, and human subjects' protection. This section also provides a description of the data collection methods and analysis plan, along with data coding and cleaning, how missing data was handled and sample size.

Idaho Senior Refugee Interprofessional Holistic Health Project

A large university in the Northwestern USA developed an interprofessional education (IPE) program where health professionals from a wide range of healthcare disciplines worked as a team to care for a vulnerable health population of senior refugees living in the area. The focus of the main study was to assess the development of collaborative skills of healthcare professional students, working in healthcare teams, while providing health assessment to senior refugees in their homes (Nies, 2017).

This dissertation study used secondary data from the Idaho Senior Refugee Interprofessional Holistic Health Project because this was not a population that could be easily studied by a single researcher. Refugee studies usually need translators and other resources that a single researcher does not have access to. This senior refugee population in Idaho was very

transient and hard to reach (Nies, 2017). By using secondary data, this study was able to provide more information about a vulnerable refugee health using existing data.

Sample

The Idaho Senior Refugee Project main study recruited senior refugees on a voluntary basis by using a convenient sampling method. Primary care providers, refugee resettlement programs, and interpreters working in the community, referred senior refugees that met inclusion criteria to the Idaho Senior Refugee Project. The Idaho Senior Refugee Project then contacted each referral, and informed them about the study. If the senior refugee agreed to participate in the program, consent was obtained, and a health professional interdisciplinary team began home visits for participant assessment (Nies, 2017). The sample for this dissertation secondary analysis consist of the senior refugees who participated in the Idaho Senior Refugee Project from September 2016 to February 2018. The Idaho Senior Refugee Project enrolled 110 participants during the study time-frame.

Some participants were seen several times during the study timeframe, but only the first visit for each study participant was used. The first visit was utilized because demographic characteristics were collected during this visit. This dissertation also looked at how demographic characteristics related to health. The first visit also gave the refugee's overall perception of health at the time their demographic characteristics were collected.

Inclusion criteria. The term senior refugee was used here to describe any person over the age 50 who was at one time classified as a refugee and granted refugee status in the USA. Inclusion criteria for all individuals considered refugees was identified because the findings of studies have suggested that regardless of length of stay in host countries, refugees continue to

report poorer health in comparison to the host population (Yun et al., 2012). Participants who met this classification were included in the study sample.

Exclusion criteria. The Idaho Senior Refugee Project excluded any individual who had never been considered a refugee, individuals younger than 50 years old, and those that declined participation in the Idaho Senior Refugee Project.

Data Collection Methods. Data for the main study was collected by health professional students with the use of a translator and supervised by faculty preceptors during the home health visit to senior refugees, conducted as part of the Idaho Senior Refugee Project. Health professional students received training before the beginning of the study in software and data collection techniques. The Research Electronic Data Capture (REDCap) program on study laptops was used to collect and store participants' health assessments and information. Health professional students directly entered data into REDCap. REDCap data was secured through log-in IDs and passwords. This dissertation researcher obtained a copy of the REDCap de-identified data after IRB approval.

Ethical Considerations

Permission to use data from the Idaho Senior Refugee Project was obtained by the author of this dissertation. Data used in this dissertation was de-identified prior to being received by the author of this dissertation, so that participants could not be connected in any way to the data. The Human Subjects Committee (IRB) at Idaho State University reviewed this dissertation study design. Upon approval from the IRB and receipt of the de-identified data, the study analysis was conducted.

Measures

Measures used in this dissertation included biomedical measures such as weight and height to calculate BMI, and blood pressure, a demographic questionnaire covering religion, age, gender, country of origin, race, ethnicity, marital status, and years living in the USA, and an instrument tool called the Health-Related Quality of Life (HRQOL). The HRQOL is a 14-question instrument used to assess the quality of life and overall health of the senior refugee study population. The questions identify overall health and ask for the number of days the participants felt mentally or physical poor in a specified timeframe, which prevented them from their usual activities (CDC, 2016). Cronbach's coefficient alpha for the four core questions was reported to be .71 (Horner-Johnson, Krahn, Andersen, & Hall, 2009). The Senior Idaho Refugee Project focused on asking the first question of the core questions. Figure 3 presents the first question of the HRQOL survey to assess the quality of life (CDC, 2016). Table 1 presents a list of variables used in this dissertation study, along with how each variable was collected, and measured.

Would you say that in general your health is?

Excellent
Very Good
Good
Fair
Poor
Don't Know/Not Sure
Refused

Figure 3. "Health-Related Quality of Life (HRQOL) Survey" by the Centers for Disease Control and Prevention. Copyright 2016 by the Center for Disease Control and Prevention.

Table 1

Variable and Measurement Table

Variable	Measurement
Age	Health Assessment
Gender	Health Assessment
Religion	Health Assessment
Race	Health Assessment
Ethnicity	Health Assessment
Marital Status	Health Assessment
Country of Origin	Health Assessment
Years living in USA	Health Assessment
BMI	Health Assessment
Blood Pressure	Health Assessment
Objective Health Indicators	BMI and Blood Pressure
Self-rated Health	Question 1 on HRQOL survey

Design

This dissertation study was an exploratory, descriptive, cross-sectional design which used secondary data to look at the association of demographic characteristics such as religion, age, gender, country of origin, race, ethnicity, marital status, and the number of year's refugees have been living in the country affected the health status of a senior refugee population. The purpose was to understand if there was any correlational relationships between demographic characteristics and health, and if demographic characteristics could be used to predict health. One aim of this research was to learn how demographic characteristics contributed to overall health, both self-rated health and objective health indicators. A second aim of this research study was to determine the association between perceived health and objective health of refugees. The final aim of this study was to determine the strength of demographic factors on self-rated health and objective health indicators when other demographic factors are controlled to understand the relationship each demographic factor had with health.

Variables. Variables that were used in this study are listed in Table 1, however, a more in-depth discussion of each was provided here. The first question from the HRQOL survey asks, “Would you say that in general your health is...”. Participants then answered based on a five-point Likert Scale (excellent, very good, good, fair, and poor). This question addressed the refugees’ self-rated health and was used as one of the criterion (dependent) variables in this dissertation. Independent variables used in this study included religion, age, gender, country of origin, race, ethnicity, marital status, and the number of years living in the country. During the first home visit, refugees answered these demographic questions as part of the health history and assessment (Nies, 2017).

During the home visit health assessment, biomedical measures such as weight and height were assessed by the main study staff. This dissertation study used the measures of weight and height to find each refugee (BMI). Hinkle and Cheever (2017), have medically classified BMI into categories of underweight, normal weight, overweight, and obese. This dissertation study used the medically classified categories of BMI to determine the objective health of each refugee. A BMI of 18.5-25 is normal weight and was categorized as good health. BMI 15-18.5 (underweight) or between 25-30 (overweight) was categorized as fair health. While a BMI under 15 (severely underweight) and above 30 (obese) was categorized as poor health (Hinkle & Cheever, 2017).

During home visits, the refugee’s BP was also taken. Blood pressure was medically classified into categories of normal blood pressure, pre-hypertension, and hypertension. This dissertation study used the medically classified categories of blood pressure identified from Hinkle and Cheever (2017), to determine the health of each refugee. Blood pressure of 120/80 and under was considered normal blood pressure and was categorized as good health. Pre-

hypertension was classified as 121-139/81-89, and blood pressure in this range was categorized as fair health. Hypertension was classified as above 140/90. Blood pressures in this range were categorized as poor health (Hinkle & Cheever, 2017).

BMI and blood pressure were used as the objective health criterion variables used in this study. BMI was used to measure body mass and help categorize a person as underweight, normal weight, or overweight. Being overweight is a predisposing factor for many chronic diseases. High blood pressure is another predisposing factor for many chronic diseases. Using these two biomedical measures provided valuable information on a patient's general health and predisposition to developing multiple chronic diseases.

Nursing relies on subjective data and objective data when taking a health assessment and history for each patient. Subjective data gathered from patients can help nurses determine how a patient believes or feels about his/her health. The self-evaluation of health is what the patient states. This dissertation study used a dependent variable that is subjective because the researcher wanted to understand the self-evaluation of overall health of senior refugees and the relationship of demographic characteristics to the self-evaluation of overall health. The association of the self-evaluated health and objective health measures were assessed to understand how refugees' own evaluations of their health relates to their objective health.

Data Analysis

The data analysis for this dissertation was guided by the research questions. The data analysis for each question was discussed below. Before analyzing any research questions, SPSS 25.0 was used to determine means and standard deviations for each of the interval scale independent variables, such as age, and the number of years living in the country. Frequency tables were used to summarize responses to the nominal scale independent variables, race,

religion, ethnicity, country of origin, gender, and marital status. A frequency table was also used to summarize responses to the ordinal scale dependent variable of overall health.

Interval data such as age and number of years living in the country was converted into ordinal scale variables. The association of independent variables such as religion, age, gender, country of origin, race, ethnicity, marital status and number of years living in the country, were assessed using Pearson Chi-Square Test of Independence. Cramer's phi or V were reported as the measure of association. Along with assessing the associations among the independent variables, Pearson Chi-Square Test of Independence was used to assess the association of overall health with each independent variable.

Question One. What is the association between self-rated health as measured by question one of the Health-Related Quality of Life (HRQOL) survey, and objective health indicators as measured by BMI and blood pressure in refugee populations? The refugee's objective health variables, BMI and blood pressure, were classified as good, fair, and poor health. These categories were based on the medical classifications for BMI and blood pressure. The association between self-evaluated health and the objective health category levels was assessed using Pearson Chi-Square Test of Independence. Cramer's phi or V was reported as an index for the degree of association. All analyses were conducted using SPSS 25.0. The level of significance for all statistical tests was set at $\alpha = .05$.

Question Two. What is the association between years of living in the USA when categorized by years living in USA by decade and health of the refugees as measured by self-rated health and objective health indicators such as BMI and BP? Pearson Chi-Square Test of Independence was used to look at the association of years living in the USA when categorized by decade to self-rated health and objective health indicators. Cramer's V was reported as an index

for the degree of association all associations tested. All analyses were conducted using SPSS 25.0. The level of significance for all statistical tests was set at $\alpha = .05$.

Question Three. What are the separate associations between religion, gender, marital status, and country of origin to self-reported health as measured from the HRQOL survey question one and objective health indicators as measured by BMI and blood pressure, when examined by categories based on the number of years living in the USA? The associations between religion, gender, and country of origin to self-evaluated health and to the objective health category levels were assessed separately. Crosstab within Pearson Chi-Square Test of Independence was used to look at the association of religion, gender, marital status, and country of origin to self-rated health and objective health indicators when categorized by years living in the USA. Cramer's V was reported as an index for the degree of association all associations tested. All analyses were conducted using SPSS 25.0. The level of significance for all statistical tests was set at $\alpha = .05$.

Question Four. What relationship does religion have on self-rated health as measured by question one of the HRQOL survey, and objective health indicators as measured by BMI and blood pressure, when gender and years living in the USA are controlled? Ordinal regression was utilized to assess if a weighted combination of the independent variables, religion, gender, and marital status, could be used to predict health, self-rated health and objective health indicators, in the senior refugee population. All analyses were conducted using SPSS 25.0. The level of significance for all statistical tests was set at $\alpha = .05$.

Question Five. What relationship does gender have on self-rated health as measured by question one of the HRQOL survey, and objective health indicators as measured by BMI and blood pressure, when years living in the USA, and ethnicity are controlled? Ordinal regression

was utilized to assess if a weighted combination of the independent variables, gender, years living in the USA, and ethnicity, can be used to predict health, self-rated health and objective health indicators, in the senior refugee population. All analyses were conducted using SPSS 25.0. The level of significance for all statistical tests was set at $\alpha = .05$.

Question Six. What relationship do years living in the USA have on self-rated health as measured by question one of the HRQOL survey, and objective health indicators as measured by BMI and blood pressure, when age is controlled? Ordinal regression was utilized to assess if a weighted combination of the independent variables, years living in the USA, and age can be used to predict self-rated health scores and objective health indicator scores in the senior refugee population. All analyses were conducted using SPSS 25.0. The level of significance for all statistical tests was set at $\alpha = .05$.

Question Seven. What relationship does country of origin have on self-rated health as measured by question one of the HRQOL survey, and objective health indicators as measured by BMI and blood pressure, ethnicity and race are controlled? Ordinal regression was utilized to assess if a weighted combination of the independent variables, country of origin, and ethnicity/race can be used to predict self-rated health scores and objective health indicator scores in the senior refugee population. All analyses were conducted using SPSS 25.0. The level of significance for all statistical tests was set at $\alpha = .05$.

Coding Data

A spreadsheet of de-identified data from the Idaho Senior Refugee Interprofessional Holistic Health Project was obtained from the principal investigation. After reviewing the Excel spreadsheet and the data dictionary, coding began. A new spreadsheet was created with variables specific for this dissertation. This dissertation study kept the same participant ID

number as the Idaho Senior Refugee Interprofessional Holistic Health Project. New variable labels were created and participant data were transferred from the original Excel spreadsheet to the spreadsheet used in this dissertation. Table 2 presents a list of variables with the Idaho Senior Refugee Interprofessional Holistic Health Projects variable label and the variable label for this dissertation study.

Table 2

Variable Label Table

Variable	Idaho Senior Refugee Interprofessional Holistic health Project Variable Label	Dissertation Study Variable Label
ID	Record ID	ID
Age	fs_age	Age
Gender	fs_gender	Gender
Religion	fs_religion	Religion
Race	fs_race	Race
Ethnicity	fs_Ethnic	Ethnic
Marital Status	fs_marital_status	MS
Country of Origin	fs_country of origin	Country
Years living in USA	fs_time_in_us	Time
	fs_time	Time1
BMI	hrv_BMI	BMI
Blood Pressure	hrv_bp	SBP
		DBP
Self-rated Health	ad_qol_genderal_health	QOL

The variable time in my study was created from two time variables in the Idaho Senior Refugee Interprofessional Holistic Health Project. The Idaho Senior Refugee Interprofessional Holistic Health Project reported refugees blood pressure in one variable, this dissertation study converted blood pressure into (1) systolic blood pressure with a variable label of SBP, and (2) diastolic blood pressure with a variable label of DBP.

Missing Data

During data cleaning, it was noted that multiple variables had missing data. During the data cleaning process, an additional 178 values for multiple variables were retrieved. A missing value analysis was performed in SPSS, Table 3 presents the results of the analysis. The variables age, gender, and race, had a missing data under 10%, which is considered acceptable for missing data.

Table 3

Missing Data by Variable

Variable	N	Missing	
		Count	Percent
Age	110	0	0
Gender	110	0	0
Country	83	27	24.5
Race	110	0	0
Ethnicity	67	43	39.1
Religion	43	67	60.9
Marital Status	85	25	22.7
Years in USA	80	30	27.3
HRQOL	110	0	0
BMI	104	6	5.5
SBP	110	0	0
DBP	110	0	0

The variables SBP and DBP were collected on all 110 refugees that had a home visit. BMI was collected on 104 refugees that had a home visit. In addition, the HRQOL survey question one was collected on all 110 refugees that had a home visit.

The variables country of origin, ethnicity, religion, marital status, and years living in the USA were above the 10% threshold of data missing at random. The data for these variables were not missing at random, so missing data techniques could not be used. Research questions that included the variables, country of origin, ethnicity, marital status, and years living in the USA

were biased due to the missing data values. With the large amount of missing data, the data analysis plan discussed in the methods section was reviewed and modified to best answer the study's research questions.

Sample Size

A power analysis in G*Power was performed to determine if the sample size of 110, was an optimal size to determine a statistically significant result for each Pearson Chi-Square test. A dependent variable with three categories, two degrees of freedom was used to measure the needed sample size. For the multiple independent variables, varying numbers of categories were evaluated. For independent variables with two categories, the needed sample size was determined to be $N = 108$ for an effect size of $w = .3$ with power = .80, and alpha set at .05.

Chapter IV

Results

The purpose of this chapter is to discuss the results of this dissertation. Previously collected data from the Idaho Senior Refugee Interprofessional Holistic Health Project was utilized in this study to answer the seven research questions outlined in the methodology section. Items discussed in the section included characteristics of the refugee sample, and finally the results of each research question are discussed.

Characteristics of the Sample Population

The Idaho Senior Refugee Interprofessional Holistic Health Project enrolled 110 refugees between September 2016 and February 2018. Each of the 110 refugees enrolled in the study, had at least one home visit. The ages of the refugees ranged from 50-96, with a mean age of 63. Age was broken into two categories based on a mean age of 63, (1) ages 50-63 ($n = 64$), and (2) ages 64 and older ($n = 46$). The number of male refugees in the study ($n = 40$), while the number of female refugees in the study were ($n = 70$). Table 4 presents the demographic characteristics of age and gender.

Table 4

Demographic Characteristics for Age and Gender

Variable	Frequency	Percent
Age Category		
50-63 years	64	58.2
64 years and older	46	41.8
Did not answer	0	
Gender		
Male	40	36.4
Female	70	63.6
Did not answer	0	

Of the 83 refugees that reported country of origin, they reported originating from one of twelve different countries: Afghanistan ($n = 5$), Bhutan ($n = 23$), Democratic Republic of Congo ($n = 4$), Republic of Congo ($n = 21$), Palestine ($n = 1$), Iraq ($n = 13$), Burundi ($n = 4$), Myanmar ($n = 7$), Somalia ($n = 2$), Rwanda ($n = 1$), Pakistan ($n = 1$), and Armenia ($n = 1$). Country of origin was categorized into two categories (1) Eurasia ($n = 52$), and (2) Africa ($n = 31$). All the refugees completed the question regarding race, and that they identified with one of four races, white ($n = 27$), Hispanic or Latino ($n = 1$), Asian ($n = 43$), or Black or African American ($n = 39$). For this dissertation study race was broken into two categories, (1) White ($n = 27$) and (2) Other ($n = 83$). Table 5 presents the demographic characteristics of country of origin and race.

Table 5

Demographic Characteristics for Country of Origin and Race

Variable	Frequency	Percent
Country of Origin		
Afghanistan	5	4.5
Bhutan	23	20.9
Democratic Republic of Congo	4	3.6
Republic of Congo	21	19.1
Palestine	1	0.9
Iraq	13	11.8
Burundi	4	3.6
Myanmar	7	6.4
Somalia	2	1.8
Rwanda	1	0.9
Pakistan	1	0.9
Armenia	1	0.9
Did not answer	27	24.5
Country of Origin Category		
Eurasia	52	47.3
Africa	31	28.2
Race		
White	27	24.5
Hispanic or Latino	1	0.9
Asian	43	39.1
Black or African American	39	35.5
Did not answer	0	0
Race Category		
White	27	24.5
Other	83	75.5

Of the 67 refugees that reported ethnicity, they identified with one of four ethnic groups, Congo ($n = 2$), Bembe ($n = 1$), Afghani ($n = 1$), Not Hispanic or Latino ($n = 63$). For this dissertation study ethnicity was broken into two categories (1) Not Hispanic or Latino ($n = 63$) and (2) Other ($n = 4$). For refugees that reported a religion, Muslim ($n = 18$), Christian ($n = 23$), not religious ($n = 2$). Refugees did not answer this question for the most part with no religion reported for ($n = 67$). Of the 85 refugees that reported marital status, single ($n = 10$), married (n

= 58), divorced ($n = 1$), widowed ($n = 16$). Two categories, (1) Married ($n = 58$) and (2) Single, single, divorced, and widowed, ($n = 27$). Table 6 presents the demographic characteristics for ethnicity, religion, and marital status.

Of the 80 refugees that reported the number of years they had lived in the USA, ($n = 38$) lived in the USA under two years and ($n = 42$) lived in the USA 2 years or longer. The two-year cut off point was created to distinguish between newly arrived refugees and established refugees, while also trying to provide an even number of refugees to each group. The longest a refugee reported living in the USA was 14 years, while four refugees reported living in the USA less than one month. Table 6 presents the demographic characteristics of number of years in USA.

Table 6

Demographic Characteristics of Ethnicity, Marital Status, and Years Living in USA

Variable	Frequency	Percent
Ethnicity		
Congo	2	1.8
Bembe	1	0.9
Afghani	1	0.9
Not Hispanic or Latino	63	57.3
Did not answer	43	39.1
Ethnicity Category		
Not Hispanic or Latino	63	57.3
Other	4	3.6
Did not answer	43	39.1
Religion		
Muslim	18	16.4
Christian	23	20.9
No Religion	2	1.8
Did not answer	67	60.9
Marital Status		
Single	10	9.1
Married	58	52.7
Divorced	1	0.9
Widowed	16	14.5
Did not answer	25	22.8
Marital Status Category		
Single	27	24.5
Married	58	52.7
Did not answer	25	22.8
Years living in USA		
Under 2 years	38	34.5
2 years and longer	42	38.2
Did not answer	30	27.3

All refugees in the sample completed self-rated health and objective health indicators.

Self-rated health was collected from the HRQOL survey. Refer to Table 1 for question one of the HRQOL survey that was used to assess the variable for self-rated health. Of the 110 refugees that completed self-rated health, they reported one of six responses, excellent ($n = 4$), very good ($n = 6$), good ($n = 11$), fair ($n = 41$), poor ($n = 43$), didn't know ($n = 4$), and refused to answer (n

= 1). Self-rated health was categorized into three categories. Refugees that reported their health as excellent, very good, or good were categorized into the good health category ($n = 21$). Refugees that reported their health as fair were categorized into the fair health category ($n = 41$). Refugees that reported their health as poor were categorized into the poor health category ($n = 43$). Refugees that refused or did not know their self-rated health were not classified. Table 7 presents the demographic information for HRQOL survey and this dissertation self-rated health categories.

Table 7

Demographic Characteristics for HRQOL, Self-Rated Health, and Objective Health

Variable	Frequency	Percent
HRQOL		
Excellent	4	3.6
Very Good	6	5.5
Good	11	10
Fair	41	37.3
Poor	43	3.6
Don't Know	4	3.6
Refused	1	0.9
Self-Rated Health		
Good	21	19.1
Fair	41	37.3
Poor	43	39.1
Not Classified	5	4.5
Objective Health		
Good	7	6.4
Fair	27	24.5
Poor	76	69.1
Missing	0	0

Refugees BMI varied from 15.6 to 49.4, with $M = 28$, and $SD = 6$. Table 8 presents the BMI demographic data including minimum score, maximum score, mean, and standard deviation. This dissertation study used the medically classified categories of BMI to determine the objective health of each refugee. A BMI of 18.5 to 25 is normal weight. Scores within this

range were categorized as good health. BMI 15 to 18.5 is considered to be underweight and scores between 25 to 30 are slightly overweight. Scores in this range were categorized as fair health. A BMI under 15 is considered to be severely underweight and a BMI above 30 is considered to be obese. Scores in these ranges were categorized as poor health. Table 7 presents the demographic information for the objective health category. Hinkle & Cheever (2017) was used to identify blood pressure and BMI categories.

Table 8

Demographic Characteristics for BMI, SBP, and DBP

	<i>n</i>	Minimum	Maximum	Mean	<i>SD</i>
BMI	86	15	49	28	6
SBP	96	102	238	142	22
DBP	96	50	120	85	13

Refugees SBP varied from 102 to 238, with $M = 142$ and $SD = 22$. Refugees DBP varied from 50 to 120, with $M = 85$, and $SD = 13$. Table 8 presents the blood pressure demographic data including low score, high score, mean, and standard deviation. Because blood pressure of 120/80 and under is considered to be normal blood pressure, scores in this range were categorized as good health. Pre-hypertension is classified as 121-139/81-89. Blood pressure in this range was categorized as fair health. Hypertension is classified as blood pressure above 140/90. Blood pressures in this range will be categorized as poor health. Table 7 presents demographic data for the objective health variable. BMI, SBP, and DBP were all converted into objective health categories and the highest category was used as the objective health score in this dissertation study. Of the 110 refugees, ($n = 7$) were classified as having good health, ($n = 27$) were classified as having fair health, and ($n = 76$) were classified as having poor health.

Associations Among the Demographic Variables

Pearson Chi-Square Tests of Independence were used to assess the association of demographic variables with each other and with the dependent variables of objective health and self-rated health. The associations of each independent variable with other independent variables and the dependent variables will be discussed below. Fisher's Exact Test was also reported for Chi-Square Tests of Independence because multiple variables had cells counts less than 5, low cell counts above 20% violate an assumption of the Pearson Chi-Square Test of Independence.

Age. Table 9 presents the cross-tabulation tables for age in relation to gender, country of origin, race, ethnicity, marital status, number of years in host country, self-rated health, and objective health indicator.

Table 9

Cross-Tabulation Table for Age and Study Variables

	Age	
	50-63 Years Old	64 Years and Older
Gender		
Male	23	17
Female	31	29
Country of Origin		
Eurasia	33	19
Africa	16	15
Race		
White	18	9
Other	46	37
Ethnicity		
Other	1	3
Non-Hispanic or Latino	42	31
Marital Status		
Single	13	14
Married	39	19
Number of Years in Host Country		
Under 2 Year	24	14
2 Years and Longer	26	16
Self-Rated Health		
Good	14	7
Fair	23	18
Poor	25	18
Objective Health		
Good	4	3
Fair	16	11
Poor	44	32

Table 10 presents the Chi-Square Tests of Independence between age and the variables, gender, country of origin, race, ethnicity, marital status, number of years in the host country, self-rated health, and objective health indicators. As can be seen from Table 10, there were no statistically significant associations between age and any of the other demographic variables.

Table 10

Chi-Square Test of Independence Between Age and Study Variables

Variable	Pearson χ^2	DF	Age <i>p</i> value	Cramer's ϕ or <i>V</i>	Fisher's Exact Test <i>p</i> value
Gender	0.12	1	.91	.01	1.00
Country of Origin	1.13	1	.29	.12	.36
Race	1.06	1	.30	.10	.37
Ethnicity	2.84	1	.09	.21	.13
Marital Status	2.83	1	.09	.18	.10
Number of years in host country	0.01	1	.91	.01	1.00
Self-rated health	0.67	2	.72	.08	.76
Objective health	0.02	2	.99	.01	1.00

Note. The association between age and ethnicity, age and objective health indicators had cells counts less than 5.

For my study sample, age was not associated with race, self-rated health or objective health indicators for the study population. Age also was not associated with country or origin, ethnicity, marital status, and the number of years living in the USA for the refugees for whom data were available.

Gender. Pearson Chi-Square Tests of Independence were used to assess the association of demographic variables with each other and with the dependent variables objective health indicators and self-rated health. Table 11 presents the cross-tabulation tables for gender and country of origin, race, ethnicity, marital status, number of years in host country, self-rated health, and objective health.

Table 11

Cross-Tabulation Table for Gender and Study Variables

	Gender	
	Male	Female
Country of Origin		
Eurasia	17	35
Africa	8	23
Race		
White	8	19
Other	32	51
Ethnicity		
Other	2	2
Non-Hispanic or Latino	20	43
Marital Status		
Single	3	24
Married	28	30
Number of Years in Host Country		
Under 2 Year	13	25
2 Years and Longer	12	30
Self-Rated Health		
Good	8	13
Fair	15	26
Poor	16	27
Objective Health		
Good	4	3
Fair	13	14
Poor	23	53

Table 12 presents the Chi-Square Tests of Independence between gender and the variables, country of origin, race, ethnicity, marital status, number of years in the host country, self-rated health, and objective health. Table 12 shows no statistically significant associations between gender and country of origin, race, ethnicity, number of years living in the host country, self-rated health, and objective health indicators. There was a small association between gender and marital status.

Table 12

Chi-Square Test of Independence Between Gender and Study Variables

Variable	Pearson χ^2	DF	Gender		
			<i>p</i> value	Cramer's ϕ or <i>V</i>	Fisher's Exact Test <i>p</i> value
Country of Origin	0.44	1	.51	.07	.62
Race	0.70	1	.40	.08	.49
Ethnicity	0.57	1	.45	.09	.59
Marital Status	10.98	1	.001	.36	.001*
Number of years in host country	0.30	1	.59	.06	.64
Self-rated health	0.01	2	.99	.01	1.00
Objective health	4.15	2	.13	.19	.13

Note. The association between gender and ethnicity, gender and marital status, gender and objective health indicators, had cells counts less than 5.

* $p < .05$

All refugees completed questions regarding gender, race, self-rated health, and were measures on indicators of their objective health. My study did not find evidence of associations between gender and the variables race, self-rated health or objective health in my study sample. My study also found no association between gender and the variables country of origin, ethnicity, and the number of years living in the USA for refugees for whom data were available. This study showed a small association between marital gender and marital status. There was a higher portion of single women (44%) than single men (10%), for refugees for whom data were available.

Country of Origin. Pearson Chi-Square Tests of Independence were conducted to assess the associations of the demographic variables with each other, and with objective health and self-rated health. Table 13 presents the cross-tabulation tables for country of origin and ethnicity, marital status, number of years in host country, self-rated health, and objective health.

Table 13

Cross-Tabulation Table for Country of Origin and Study Variables

	Country of Origin	
	Eurasia	Africa
Race		
White	20	1
Other	32	30
Ethnicity		
Other	1	3
Non-Hispanic or Latino	38	19
Marital Status		
Single	12	12
Married	34	14
Number of Years in Host Country		
Under 2 Year	14	22
2 Years and Longer	33	5
Self-Rated Health		
Good	5	8
Fair	21	10
Poor	25	11
Objective Health		
Good	3	2
Fair	13	9
Poor	36	20

Table 14 presents the Chi-Square Tests of Independence between country of origin and the variables, race, ethnicity, marital status, number of years in the host country, self-rated health, and objective health. As can be seen from Table 14, there were no statistically significant associations between country of origin and ethnicity, marital status, self-rated health, and objective health.

As can be seen in Table 14, there was a weak association between country of origin and race. Refugees who identified as white (80%) were more likely to come from countries in Asia or Europe than Africa (20%). Refugees who identified as other (Asian, African American or black, and Native American, 51.9%) were slightly more likely to come from countries in Africa

than countries in Europe or Asia (48.1%). There was a moderate association between country of origin and number of years living in the host country. Refugees from Africa (66.7%) were more likely to have lived in the USA less than two years, while refugees from Asia or Europe were more likely to have lived in the USA for two years or more (85%). This finding fits with the history of Idaho accepting refugees because the first refugees brought to Idaho were refugees from Asian countries. As the Idaho refugee program expanded Idaho accepted refugees from other countries.

Table 14

Chi-Square Test of Independence Between Country of Origin and Study Variables

Variable	Pearson χ^2	DF	Country of Origin		
			p value	Cramer's ϕ or V	Fisher's Exact Test p value
Race	12.76	1	< .001*	.39	< .001*
Ethnicity	2.81	1	.09	.22	.13
Marital Status	3.01	1	.08	.20	.12
Number of years in host country	18.34	1	< .001*	.50	< .001*
Self-rated health	3.52	2	.17	.24	.20
Objective health	0.20	2	.91	.05	.93

Note. The association between country of origin and race, country of origin and ethnicity, country of origin and the number of years living in the host country, and country of origin and objective health indicators, had cells counts less than 5.

* $p < .05$

In my study, no association between country of origin and the study variables, ethnicity, or marital status. As can be seen in Table 14, there was a weak association between country of origin and race. This finding was expected. Race is known to be associated with geographic location. Refugees who identified as black or African American were more likely to come from Africa. The study also found an association between country of origin and the number of years living in the USA. Idaho's refugee program first took refugees from countries in Asia, and then began accepting refugees from other countries (Idaho Office for Refugees, n.d.). This study

found that refugees from African countries were more likely to have lived in the USA less than two years. While refugees from Europe and Asia were more likely to have lived in the USA longer than 2 years. This study's findings follow the history of the Idaho resettlement program. Country of origin did not predict either self-rated health or objective health.

Race. Pearson Chi-Square Tests of Independence were used to assess the associations of demographic variables with each other and with objective health and self-rated health. Table 15 presents the cross-tabulation tables for race and the other variables measured in this dissertation study.

Table 15

Cross-Tabulation Table for Race and Study Variables

	Race	
	White	Other
Ethnicity		
Other	1	44
Non-Hispanic or Latino	19	3
Marital Status		
Single	5	22
Married	14	44
Number of Years in Host Country		
Under 2 Year	5	33
2 Years and Longer	12	30
Self-Rated Health		
Good	2	17
Fair	5	28
Poor	12	25
Objective Health		
Good	0	7
Fair	5	22
Poor	22	54

Table 16 presents the Chi-Square Tests of Independence between race and ethnicity, marital status, number of years in the host country, self-rated health, and objective health. As

can be seen from Table 16, there were no statistically significant associations between race and ethnicity, marital status, the number of years living in the host country, and objective health. There was a small association between race and self-rated health. The association revealed a higher percentage of refugees with a race classification of other (Asian, Latino, or African American/Black) reported their health as poor (63% versus 36% for White) and a lower percentage reported their health as good (10% versus 24% for White) compared to the refugees with a race classification of white.

Table 16

Chi-Square Test of Independence Between Race and Study Variables

Variable	Pearson χ^2	DF	Race		
			<i>p</i> value	Cramer's ϕ or <i>V</i>	Fisher's Exact Test <i>p</i> value
Ethnicity	0.5	1	.83	.03	1.00
Marital Status	0.34	1	.77	.06	.78
Number of years in host country	2.83	1	.09	.19	.11
Self-rated health	6.80	2	.03	.23	.04*
Objective health	3.60	2	.17	.18	.06

Note: The association between race and ethnicity, race and self-rated health, and race and objective health indicators, had cells counts less than 5.

In my study, no association between race and the study variables, ethnicity, marital status, or the number of years living in the host country. No association between race and the study variables was found between self-rated health and objective health.

Ethnicity. Pearson Chi-Square Tests of Independence were used to assess the association of demographic variables with each other and with the dependent variables objective health and self-rated health. Table 17 presents the cross-tabulation tables for ethnicity and the other variables used in this dissertation study.

Table 17

Cross-Tabulation Table for Ethnicity and Study Variables

	Ethnicity	
	Other	Non-Hispanic or Latino
Marital Status		
Single	1	15
Married	1	40
Number of Years in Host Country		
Under 2 Year	4	24
2 Years and Longer	0	32
Self-Rated Health		
Good	0	14
Fair	1	23
Poor	2	25
Objective Health		
Good	0	3
Fair	1	14
Poor	3	46

Table 18 presents the Chi-Square Tests of Independence between ethnicity and marital status, number of years in the host country, self-rated health, and objective health. As can be seen from Table 18, there were no statistically significant associations between ethnicity, and marital status, self-rated health, or objective health. There was a small association between ethnicity and the number of years living in the USA. All refugees living in the USA less than two years reported their ethnicity as non-Hispanic or Latino. For refugees that lived in the USA more than 2 years, 85% reported their ethnicity as non-Hispanic or Latino, while 15% reported their ethnicity as Other.

Table 18

Chi-Square Test of Independence Between Ethnicity and Study Variables

Variable	Ethnicity			Cramer's ϕ or V	Fisher's Exact Test p value
	Pearson χ^2	DF	p value		
Marital Status	0.49	1	.48	.09	1.00
Number of years in host country	5.90	1	.03*	.24	.04*
Self-rated health	1.16	2	.56	.13	.79
Objective health	0.20	2	.90	.06	1.00

Note. The associations between ethnicity and marital status, ethnicity and the number of years living in the host country, ethnicity and self-rated health, and ethnicity and objective health indicators, had cells counts less than 5.

In my study, there was no association between ethnicity and the study variables, marital status, or the number of years living in the host country. There was also no association between ethnicity and either self-rated health or objective health. Only 60% of the refugees reported ethnicity, so the association between ethnicity and the other study variables were biased due to the missing data values.

Marital Status. Pearson Chi-Square Tests of Independence were used to assess the association of demographic variables with each other and with the dependent variables objective health indicators and self-rated health. Table 19 presents the cross-tabulation tables for Marital and the other variables used in this dissertation study.

Table 19

Cross-Tabulation Table for Marital Status and Study Variables

	Marital Status	
	Single	Married
Number of Years in Host Country		
Under 2 Year	13	21
2 Years and Longer	10	27
Self-Rated Health		
Good	4	11
Fair	10	24
Poor	12	22
Objective Health		
Good	3	3
Fair	7	16
Poor	17	39

Table 20 presents the Chi-Square Tests of Independence between marital status, and number of years in the host country, self-rated health, and objective health indicators. As can be seen from Table 18, there were no statistically significant associations between marital status and the number of years living in the host country, self-rated health, or objective health.

Table 20

Chi-Square Test of Independence Between Marital Status and Study Variables

Variable	Pearson χ^2	DF	Race		
			p value	Cramer's ϕ or V	Fisher's Exact Test p value
Number of years in host country	1.02	1	.31	.12	.45
Self-rated health	0.46	2	.79	.07	.86
Objective health indicators	.99	2	.61	.11	.65

Note. The associations between marital status, and self-rated health, and marital status and objective health indicators, had cells counts less than 5.

Eighty-five refugees in my study answered the question regarding marital status. For these refugees, marital status was not associated with the number of years living in the host country, self-rated health, or objective health.

Association of Health Indicators

What is the association between self-rated health as measured by question one of the Health-Related Quality of Life (HRQOL) survey, and objective health as classified from measured BMI and blood pressure in the refugee population? A Chi-Square test of independence was calculated comparing the self-rated health to the objective health of the refugees. Table 21 presents the cross-tabulation table of the health measures.

Table 21

Cross-Tabulation Table for Self-Rated Health and Objective Health

	Objective Health		
	Good	Fair	Poor
Self-Rated Health			
Good	1	9	11
Fair	4	7	30
Poor	2	11	30

There was no association between self-rated health and objective health, $\chi^2(4, n = 105) = 5.49, p = .25$ (Fisher's Exact Test), $V = .16$. In research, self-rated health has often been used as a proxy for objective health. Because there was no association between self-rated health and objective health indicators for this population, these variables should not be interchanged or used in the place of the other for the refugees in this study sample. This unexpected finding might be due to the measure of self-rated health employed in this investigation.

Associations Between Years Living in the USA and Health

What is the association between categorized years living in USA and health of the refugees as measured by self-rated health and objective health? Of the 80 refugees that reported the number of years they had lived in the USA, only one refugee had lived in the USA longer than one decade. With all but one refugee living in the USA less than a decade, the data for this variable were re-categorized into living under two years in the USA and living longer than two years. The two-year cut off point was created to distinguish between newly arrived refugees and refugees that were more established in the USA.

A Chi-Square test of independence was calculated comparing self-rated health in refugees living less than two years in the USA and refugees living two years or longer in the USA. Another Chi-Square test of independence was calculated for objective health. Table 22 presents the cross-tabulation tables for number of years in host country compared to self-rated health and objective health.

Table 22

Cross-Tabulation Table for Number of Years in Host Country, Self-Rated Health, and Objective Health

	Number of years in host country	
	Under 2 years	2 Years and longer
Self-Rated Health		
Good	9	6
Fair	11	18
Poor	17	18
Objective Health		
Good	3	2
Fair	15	8
Poor	20	32

Table 23 presents the Chi-Square Tests of Independence between number of years in the host country, and the self-rated health and objective health measures. Fisher's Exact Test was

reported for the Chi-Square Test of Independence between the number of years living in the USA and objective health, because there were cell counts less than five. Low cell counts above 20% violate an assumption of the Pearson Chi-Square Test of Independence. As can be seen in Table 23, there was no statistically significant association between number of years in the host country and self-rated health and there was also no statistically significant association between number of years in the host country and objective health indicators for refugees whom data were available.

Table 23

Chi-Square Test of Independence Between Number of Years in Host Country and Health Variables

Variable	Number of Years in Host Country				Fisher's Exact Test <i>p</i> value
	Pearson χ^2	DF	<i>p</i> value	Cramer's ϕ or <i>V</i>	
Self-rated health	2.01	2	.37	.16	.35
Objective health	4.91	2	.09	.25	.09

Note. The association between the number of years in the host country and objective health had cells counts less than 5.

Associations Between Demographic Variables and Health When Categorized by the

Number of Years Living in the Host Country

What are the separate associations between religion, gender, marital status, and country of origin to self-reported health as measured from the HRQOL survey question one and objective health as measured by BMI and blood pressure, when examined by categories based on the number of years living in the USA? A Chi-Square test of independence was calculated comparing gender and self-rated health when categorized by number of years living in the USA. Due to the amount of missing data for country of origin, marital status, and the number of years living in the USA the results of this question can only be applied to refugees for whom data were available.

Gender. Table 24 presents the cross-tabulation tables for gender and self-rated health when categorized by number of years living in the USA. Seventy-nine refugees completed questions regarding gender, the number of years living in the USA, and self-rated health.

Table 24

Cross-Tabulation of Gender and Self-Rated Health When Categorized by Number of Years Living in USA

	Self-Rated Health		
	Good	Fair	Poor
Under 2 Years			
Male	4	3	6
Female	5	8	11
2 Years and Longer			
Male	0	4	8
Female	6	14	10

Based on a Fisher's Exact Test, there was no statistically significant association between gender and self-rated health when categorized by number of years living in the USA, $X^2(2, n = 79) = 2.06, p = .39 V = .16$. One cell (16.7%) had a count less than five, which was why a Fisher's Exact Test was reported.

A chi-Square test of independence was calculated comparing gender and objective health when categorized by number of years living in the USA. Of the 110 refugees who completed the health measures, only 80 refugees completed demographic questions regarding gender, number of years living in the USA, and objective health indicators. Table 25 presents the cross-tabulation tables for gender and objective health indicators when categorized by number of years living in the USA.

Table 25

Cross-Tabulation of Gender and Objective Health When Categorized by Number of Years Living in USA

	Objective Health		
	Good	Fair	Poor
Under 2 Years			
Male	1	6	6
Female	2	9	14
2 Years and Longer			
Male	1	4	7
Female	1	4	25

A Fisher's Exact Test showed there was no statistically significant association between gender and objective health when categorized by number of years living in the USA, $\chi^2(2, n = 80) = 2.72, p = .21, V = .16$. Two cells (33.3%) had counts less than five; therefore, a Fisher's Exact Test was reported. In this study, I did not find that gender was associated with either self-rated health or objective health regardless of how long a refugee had lived in the USA, but this finding only holds for the refugees whom data were available.

Marital Status. A Chi-Square test of independence was calculated comparing marital status and self-rated health when categorized by number of years living in the USA. Seventy refugees completed demographic questions regarding marital status, number of years living in the USA, and objective health. Table 26 presents the cross-tabulation tables for marital status and self-rated health when categorized by number of years living in the USA.

Table 26

Cross-Tabulation of Marital Status and Self-Rated Health When Categorized by Number of Years Living in USA

	Self-Rated Health		
	Good	Fair	Poor
Under 2 Years			
Single	3	4	5
Married	6	5	10
2 Years and Longer			
Single	1	3	6
Married	3	13	11

The Fisher's Exact Test was reported because one cell (16.7%) had a count less than five. The result indicated there was no statistically significant association between marital status and self-rated health when categorized by number of years living in the USA, $X^2(2, n = 70) = 0.27, p = .94, V = .21$.

A Chi-Square test of independence was also calculated comparing marital status and objective health indicators when categorized by number of years living in the USA. Seventy-one refugees completed demographic questions regarding marital status, number of years living in the USA, and objective health indicators. Table 27 presents the cross-tabulation tables for marital status and objective health when categorized by number of years living in the USA.

Table 27

Cross-Tabulation of Marital Status and Objective Health When Categorized by Number of Years Living in USA

	Objective Health		
	Good	Fair	Poor
Under 2 Years			
Single	0	5	8
Married	3	9	9
2 Years and Longer			
Single	2	1	7
Married	0	6	21

Two cells (33.3%) had a count less than five, so a Fisher's Exact test was reported. There was no statistically significant association between marital status and objective health when categorized by number of years living in the USA, $X^2(2, n = 71) = 0.29, p = .85, V = .06$.

Country of Origin. A Chi-Square test of independence was calculated comparing country of origin and self-rated health when categorized by number of years living in the USA. Seventy-three refugees completed demographic questions regarding country of origin, number of years living in the USA, and self-rated health. Table 28 presents the cross-tabulation tables for country of origin and self-rated health when categorized by number of years living in the USA.

Table 28

Cross-Tabulation of Country of Origin and Self-Rated Health When Categorized by Number of Years Living in USA

	Self-Rated Health		
	Good	Fair	Poor
Under 2 Years			
Eurasia	2	5	7
Africa	6	6	9
2 Years and Longer			
Eurasia	3	15	15
Africa	1	2	2

A Fisher's Exact test showed there was no statistically significant association between country of origin and self-rated health when categorized by number of years living in the USA, $X^2(2, n = 73) = 3.38, p = .20, V = .06$. One cells (16.7%) had a count less than five, so the result of the exact test was reported.

A Chi-Square test of independence was also calculated comparing country of origin and objective health when categorized by number of years living in the USA. Seventy-four refugees completed demographic questions regarding country of origin, number of years living in the

USA, and objective health indicators. Table 29 presents the cross-tabulation tables for country of origin and objective health indicators when categorized by number of years living in the USA.

Table 29

Cross-tabulation of Country of Origin and Objective Health When Categorized by Number of Years Living in USA

	Objective Health		
	Good	Fair	Poor
Under 2 Years			
Eurasia	1	6	7
Africa	1	9	12
2 Years and Longer			
Eurasia	1	5	27
Africa	1	0	4

A Fisher's Exact test was reported because two cells (33.3%) had counts less than five, which is the minimum expected for a valid Pearson Chi-Square Test of Independence. Based on the exact test, there was no statistically significant association between country of origin and objective health categorized by number of years living in the USA, $X^2(2, n = 74) = 1.38, p = .53, V = .14$.

Relationship Between Gender and the Number of Years Living in the USA

What relationship does religion have on self-rated health as measured by question one of the HRQOL survey, and objective health as categorized from BMI and blood pressure, when gender and years living in the USA are controlled? Due to the lack of usable data, religion could not be analyzed as a variable in this study. Instead, the relationships of gender and the number of years living in the USA with self-rated health and with objective health were analyzed.

An ordinal logistic regression was conducted to determine whether gender and number of years living in the USA were predictors of self-rated health. The assumption of proportional odds was met, as assessed by a test of parallel lines, $-2 \text{ Log Likelihood} = 27.03, X^2(4, n = 79) =$

2.42, $p = .30$. One cell (8.3%) was sparse with zero frequencies. The final model for the ordinal regression was not statistically significant, $-2 \text{ Log Likelihood} = 29.45$, $\chi^2(2, n = 79) = 1.75$, $p = .41$. It did not predict the dependent variable over and above the intercept-only model. The Nagelkerke pseudo R^2 indicated that the model accounted for only 2.4% of the total variance. The combination of gender and number of years living in the USA did not explain or predict refugees self-rated health for the refugees that answered these questions. Table 30 presents slope coefficients, confidence intervals, and hypothesis tests.

Table 30

Ordinal Logistic Regression Between Gender, Years Living in the USA, and Self-Rated Health

	Slope Coefficients	Confidence Intervals		Hypothesis Testing		
		Lower	Upper	Wald χ^2	DF	p value
Gender	0.55	0.22	1.37	1.67	1	.20
Years living in the USA	1.15	0.50	2.64	0.10	1	.75

An ordinal logistic regression was also conducted to determine whether gender and number of years living in the USA were predictors of objective health. The assumption of the proportional odds was met as assessed by a test of parallel lines, $-2 \text{ Log Likelihood} = 21.60$, $\chi^2(4, n = 80) = 0.53$, $p = .77$. The final model was statistically significant and the model predicted the dependent variable over and above the intercept-only model, $-2 \text{ Log Likelihood} = 22.13$, $\chi^2(2, n = 80) = 6.79$, $p = .03$. The Nagelkerke pseudo R^2 indicated that the model accounted for approximately 10.1% of the total variance. For the refugees who answered the questions regarding gender and the number of years living in the USA, the weighted combination of these variables explained 10.1% of the variance of their objective health.

The odds of females having good objective health was 2.01 times males, 95% CI [0.78, 5.52], but the chi-square test for this predictor was not statistically significant, $\chi^2(1) = 2.15, p = .14$. The odds of living in the USA two years or longer and having good objective health was 2.69 times, 95% CI [1.04, 6.87], that of refugees living in the USA less than two years. Number of years living in the USA did have a statistically significant effect on objective health indicators, $\chi^2(1) = 4.17, p = .04$. Table 31 presents slope coefficients, confidence intervals, and hypothesis tests.

Table 31

Ordinal Logistic Regression Between Gender, Years Living in the USA, and Objective Health

	Slope Coefficients	Confidence Intervals		Hypothesis Testing		
		Lower	Upper	Wald χ^2	DF	p value
Gender	2.08	0.78	5.52	2.15	1	.14
Years living in the USA	2.69	1.04	6.97	4.17	1	.04*

* $p < .05$

The model revealed that the number of years living in the USA was the key predictor in explaining objective health in refugees, but this finding may only apply to the refugees for whom data were available. Twenty-seven percent of the study sample did not provide information on the number of years they lived in the USA, so the findings may not be generalizable to the entire study population. Gender did not contribute to explaining or predicting objective health indicators in the 80 refugees for whom data were available.

Relationship between Gender, the Number of Years Living in the USA, and Ethnicity

What relationship does gender have on self-rated health as measured by question one of the HRQOL survey, and objective health indicators as measured by BMI and blood pressure, when years living in the USA, and ethnicity are controlled? An ordinal logistic regression

performed to determine whether gender, the number of years living in the USA, and ethnicity predicted self-rated health. The assumption of the proportional odds was met as assessed by a test of parallel lines, $-2 \text{ Log Likelihood} = 24.5$, $\chi^2(4, n = 59) = 6.21$, $p = .10$. Four cells were sparse with zero frequencies in 22.2% of cells. The final model was not statistically significant. The model did not predict the dependent variable over and above the intercept-only model, $-2 \text{ Log Likelihood} = 30.78$, $\chi^2(2, n = 59) = 1.52$, $p = .68$. The Nagelkerke pseudo R^2 indicated that the model accounted for approximately 2.9% of the total variance. Gender, the number of years living in the USA, and ethnicity did not explain or predict refugees self-rated health for the refugees for whom these data were available. Table 32 presents slope coefficients, confidence intervals, and hypothesis tests.

Table 32

Ordinal Logistic Regression between Gender, Years Living in the USA, Ethnicity, and Self-Rated Health

	Slope Coefficients	Confidence Intervals		Hypothesis Testing		
		Lower	Upper	Wald χ^2	DF	p value
Gender	0.71	0.25	2.05	0.39	1	.53
Years living in the USA	1.30	0.48	3.53	0.27	1	.60
Ethnicity	0.33	0.25	4.17	0.75	1	.38

An ordinal logistic regression was carried out to determine whether gender, the number of years living in the US, and ethnicity predicted objective health. The assumption of the proportional odds was met as assessed by a test of parallel lines, $-2 \text{ Log Likelihood} = 19.78$, $\chi^2(4, n = 60) = 3.03$, $p = .39$. Four cells were sparse with zero frequencies in 22.2% of cells. The final model was not statistically significant, $-2 \text{ Log Likelihood} = 22.82$, $\chi^2(2, n = 60) = 5.06$, $p = .17$. The model did not predict the dependent variable over and above the intercept-only

model. The Nagelkerke pseudo R^2 indicated that the model accounted for approximately 10.7% of the total variance. Despite the model accounting for 10.7% of the variance, no relationship between the weighted combination of gender, the number of years living in the host country, and ethnicity with objective health was found. Gender, the number of years living in the USA, and ethnicity did not explain or predict the objective health of the refugees for whom these data were available. Table 33 presents slope coefficients, confidence intervals, and hypothesis tests.

Table 33

Ordinal Logistic Regression Between Gender, Years Living in the USA, Ethnicity, and Objective Health

	Slope Coefficients	Confidence Intervals		Hypothesis Testing		
		Lower	Upper	Wald χ^2	DF	<i>p</i> value
Gender	1.89	0.55	6.43	1.02	1	.31
Years living in the USA	3.31	0.95	11.48	3.55	1	.06
Ethnicity	0.42	0.04	4.93	0.48	1	.49

The model from question four was statistically significant in predicting objective health outcomes when looking at just gender and the number of years living in the USA. When ethnicity was added, the model was no longer significant. However, only 67 refugees completed the question on ethnicity. This created a smaller sample size than the model from question four, which decreased the power to run a statistically significant ordinal regression. As a result, a separate ordinal regression was run for ethnicity to determine the influence ethnicity had on self-rated health and objective health indicators.

Ethnicity. First, ethnicity and self-rated health were analyzed. The model was not statistically significant and it did not predict the self-rated health over and above the intercept-only model, $-2 \text{ Log Likelihood} = 10.79$, $\chi^2(2, n = 65) = 1.14$, $p = .29$. The Nagelkerke pseudo R^2

indicated that the model accounted for merely 2% of the total variance. For the 65 refugees that responded to the ethnicity question, ethnicity did not explain or predict refugees self-rated health.

Second, ethnicity and objective health were analyzed. The model was not statistically significant and the model did not predict objective health over and above the intercept-only model, $-2 \text{ Log Likelihood} = 9.26$, $X^2(2, n = 67) = 0.02$, $p = .89$. The Nagelkerke pseudo R^2 indicated that the ethnicity accounted for 0% of the total variance in objective health. For the 67 refugees for whom data were available, objective health was not predicted or explained by ethnicity.

Relationship Between the Number of Years Living in the USA, and Age

What relationship does years living in the USA have on self-rated health as measured by question one of the HRQOL survey, and objective health as categorized from BMI and blood pressure, when age is controlled? An ordinal logistic regression was performed to determine the effect of the number of years living in the USA and age, on self-rated health. The assumption of proportional odds was met as assessed by a test of parallel lines, $-2 \text{ Log Likelihood} = 24.32$, $X^2(4, n = 79) = 3.08$, $p = .22$. The final model was not statistically significant, $2 \text{ Log Likelihood} = 27.46$, $X^2(2, n = 79) = 1.07$, $p = .59$. The model did not predict the refugees' self-rated health over and above the intercept-only model. The Nagelkerke pseudo R^2 indicated that the model accounted for approximately only 1.5% of the total variance. The combination of number of years living in the USA and age did not predict the self-rated health of the refugees for whom complete data were available. Table 34 presents slope coefficients, confidence intervals, and hypothesis tests.

Table 34

Ordinal Logistic Regression Between Years Living in the USA, Age, and Self-Rated Health

	Slope Coefficients	Confidence Intervals		Hypothesis Testing		
		Lower	Upper	Wald χ^2	DF	p value
Years living in the USA	1.10	0.48	2.51	0.05	1	.83
Age	1.55	0.65	3.68	0.97	1	.32

An ordinal logistic regression was also performed to determine whether the number of years living in the USA when combined with age predicted the objective health of the refugees. The assumption of the proportional odds was met as assessed by a test of parallel lines, -2 Log Likelihood = 26.28, $X^2(4, n = 80) = 0.31, p = .85$. Two cells were sparse with zero frequencies in 16.7% of cells. The final model was not statistically significant, -2 Log Likelihood = 26.60, $X^2(2, n = 80) = 4.68, p = .10$. However, the Nagelkerke pseudo R^2 indicated the model accounted for approximately 7.1% of the total variance. Unfortunately, due to the fact that complete data were available for only 73% of the participants, the model test likely had insufficient statistical power to show a significant relationship. Table 34 presents slope coefficients, confidence intervals, and hypothesis tests.

Table 34

Ordinal Logistic Regression Between Years Living in the USA, Age, and Objective Health

	Slope Coefficients	Confidence Intervals		Hypothesis Testing		
		Lower	Upper	Wald χ^2	DF	p value
Years living in the USA	2.75	1.08	7.05	4.45	1	.04*
Age	0.91	0.35	2.36	0.04	1	.84

* $p < .05$

Even though the model was not statistically significant, the Wald test of the slope coefficient for years living in the USA was statistically significant at $p = .04$. Because of the different findings, separate ordinal logistic regressions were performed for the number of years living in the USA and for age. In addition, due to the different number of missing values for age and number of years living in the USA, separate tests were performed for both self-rated health and for objective health.

The Number of Years Living in the USA. First, the number of years living in the USA as a predictor of self-rated health was analyzed. The model was not statistically significant predicted, $-2 \text{ Log Likelihood} = 17.04$, $X^2(2, n = 79) = 0.07$, $p = .80$. The Nagelkerke pseudo R^2 indicated that the model accounted for approximately 0.1% of the total variance. The number of years living in the USA did not explain or predict refugees self-rated health for the refugees for whom data were available.

Second, the number of years living in the USA was assessed as a predictor of objective health. The final model was statistically significant, $-2 \text{ Log Likelihood} = 13.52$, $X^2(2, n = 80) = 4.64$, $p = .03$. The Nagelkerke pseudo R^2 indicated that the model accounted for approximately 7% of the total variance. The odds of living in the USA two years or longer and having good indicators for objective health was 2.76 times, 95% CI [1.07, 7.06] times that of refugees living in the USA less than two years. The number of years living in the USA did account for seven percent of the variance in objective health indicators for the refugees for whom data were available.

Age. First, age as a predictor of self-rated health was analyzed. The model was not statistically significant, $-2 \text{ Log Likelihood} = 16.71$, $X^2(2, n = 105) = 0.22$, $p = .64$. The Nagelkerke pseudo R^2 indicated that the model accounted for approximately 0.2% of the total

variance. Consistent with the combined model, age did not explain or predict refugees self-rated health for the refugees whom data were available.

Second, age as a predictor of objective health was analyzed. This model was also not statistically significant, $-2 \text{ Log Likelihood} = 14.41$, $X^2(2, n = 110) = 0.01$, $p = .94$. The Nagelkerke pseudo R^2 indicated that the model accounted for 0% of the total variance. All study participants completed the question regarding age, which means that age did not explain the variance of the objective health indicators of refugees in this study.

Relationship between the Country of Origin, Race, and Ethnicity

What relationship does country of origin have on self-rated health as measured by question one of the HRQOL survey, and objective health as categorized from BMI and blood pressure, when both ethnicity and race are controlled? An ordinal logistic regression was conducted to determine the effect of country of origin, race, and ethnicity on self-rated health. The assumption of proportional odds was met as assessed by a test of parallel lines, $-2 \text{ Log Likelihood} = 21.94$, $X^2(3, n = 59) = 4.46$, $p = .22$. Five cells were sparse with zero frequencies in 27.8% of cells. The final model did not statistically significantly predict the dependent variable over and above the intercept-only model, $-2 \text{ Log Likelihood} = 26.40$, $X^2(3, n = 59) = 5.43$, $p = .14$. The Nagelkerke pseudo R^2 indicated that the model accounted for approximately 10.1% of the total variance. Unfortunately, due to the fact that complete data were available for only 54% of the participants, the model test had insufficient statistical power to say whether the combination of country of origin, race, and ethnicity explained any of the variance of the refugees' self-rated health scores. Table 36 presents slope coefficients, confidence intervals, and hypothesis tests.

Table 36

Ordinal Logistic Regression between Country of Origin, Ethnicity, Race, and Self-Rated Health

	Slope Coefficients	Confidence Intervals		Hypothesis Testing		
		Lower	Upper	Wald χ^2	DF	<i>p</i> value
Country of Origin	0.43	0.14	1.31	2.22	1	.14
Ethnicity	0.23	0.02	3.15	1.21	1	.27
Race	0.55	0.17	1.86	0.92	1	.34

An ordinal logistic regression was run to determine the effect of country of origin, race, and ethnicity on the objective health indicators. The assumption of the proportional odds was met as assessed by a test of parallel lines, $-2 \text{ Log Likelihood} = 16.03$, $X^2(3, n = 61) = 1.72$, $p = .63$. Six cells were sparse with zero frequencies in 33.3% of cells. The final model was not statistically significant and it did not predict objective health over and above the intercept-only model, $-2 \text{ Log Likelihood} = 17.75$, $X^2(3, n = 61) = 2.64$, $p = .45$. The Nagelkerke pseudo R^2 indicated the model accounted for approximately 5.6% of the total variance. Hence, a combined relationship among country of origin, race, and ethnicity with objective health was not supported. Table 37 presents slope coefficients, confidence intervals, and hypothesis tests.

Table 37

Ordinal Logistic Regression between Country of Origin, Race, Ethnicity, and Objective Health

	Slope Coefficients	Confidence Intervals		Hypothesis Testing		
		Lower	Upper	Wald χ^2	DF	<i>p</i> value
Country of Origin	0.446	0.14	1.79	1.15	1	.28
Ethnicity	0.61	0.05	7.14	0.15	1	.69
Race	0.60	0.13	2.75	0.44	1	.51

For the limited number of refugees (only 54%) in this study for whom there were complete data, the combination of country of origin, race, and ethnicity did not predict the refugee's objective health. However, because the number of cases with missing values was different for each of these variables, separate ordinal logistic regressions were performed for country of origin, race, and ethnicity to determine whether any of these variables independently predicted either of the health measures. The results for ethnicity were reported in question five.

Country of Origin. First, country of origin as a predictor of self-rated health was analyzed. The model was not statistically significant over and above the intercept-only model, $-2 \text{ Log Likelihood} = 16.49$, $X^2(2, n = 80) = 2.46$, $p = .12$. The Nagelkerke pseudo R^2 indicated that the model accounted for approximately 3.5% of the total variance. Country of origin did not explain or predict refugees self-rated health for the limited number of refugees (73%) in this study for whom the data were complete.

Second, country of origin was evaluated as a predictor of objective health. This model was also not statistically significant, $-2 \text{ Log Likelihood} = 13.28$, $X^2(2, n = 83) = 0.19$, $p = .67$. The Nagelkerke pseudo R^2 indicated that the model accounted for approximately 0.3% of the total variance. Country of Origin did not predict the objective health of the refugees for whom data were available (75%).

Race. First, the relationship of race to self-rated health was analyzed. The model was statistically significant over and above the intercept-only model, $-2 \text{ Log Likelihood} = 15.21$, $X^2(2, n = 105) = 7.01$, $p = .008$. The Nagelkerke pseudo R^2 indicated the model accounted for approximately 7.3% of the total variance. Race modestly predict refugees self-rated health. The odds of refugees who reported race as other (Asian, Black or African American, and Hispanic or Latino) reporting good self-rated health was 0.31 times, 95% CI [0.13, 0.76], that of refugees

who reported race as white. This finding can be generalized to the population of refugees investigated in this study because complete data were available for 95% of the participants for this analysis.

Second, the relationship of race with the objective health was analyzed. The model was not statistically over and above the intercept-only model, $-2 \text{ Log Likelihood} = 13.67$, $X^2(2, n = 110) = 3.19$, $p = .07$. The Nagelkerke pseudo R^2 indicated that the model accounted for approximately 3.6% of the total variance. Complete data were available for this analysis so this means race did not predict the objective health of the refugees who participated in this study.

Summary

This dissertation study found that there was no association between self-rated health and objective health in the study population. The self-rated health of the refugees did not match their measured objective health (based on BMI and BP). This study also found that the number of years a refugee lived in the USA was a predictor of the objective health of the refugees for whom data were available. Refugees that lived in the USA longer than two years reported better health than newly arrived refugees. In this study, age did not explain or predict objective health indicators for my sample population of refugees ages 50-96. Finally, race was a predictor in explaining both self-rated health and objective health for my sample population. Refugees that reported race as either Asian, Black or African American, or Hispanic or Latino reported lower health than refugees that reported race as white. The rest of the study finding were suspect due to missing data values and insufficient statistical power.

Missing Data. The variables country of origin ($n = 83$), ethnicity ($n = 67$), marital status ($n = 85$), and the number of years living in the host country ($n = 80$), all had missing data values higher than normally expected. The amount of missing data from these variables in this study

potentially biased the results of this study. Research questions containing these variables could not be answered with confidence due to the potential bias caused by the missing data and the low statistical power caused by the small sample sizes. As an example, although this study found the number of years living in the USA was a predictor that explained objective health, this result cannot be generalized to the study population with confidence. Thus, the number of years living in the USA can only be confidently said to be a predictor that explained objective health in refugees for whom data were available.

Statistical Power. The study did not meet the planned sample size of $N = 133$ or larger for the planned statistical analyses. After revising the categories for many of the predictor variables by collapsing the scales to fewer categories and thereby modifying the planned analyses for most of the research questions, it was determined that the sample size needed to detect a medium effect size with minimum power of .80 was $N = 108$ or larger. The final study sample size was $N = 110$. This met the minimum needed sample size for the modified analyses, but only if there were no missing values for any of variables. Unfortunately, there was a large percentage of missing data values for many of the variables, particularly country of origin, ethnicity, marital status, and the number of years living in the USA.

Not only did the number of missing data values create a potential bias in this study, they also created a problem for the statistical power needed to evaluate research questions two through five. Due to insufficient statistical power, this study lacked confidence in the results of my planned multivariate ordinal regression analysis, so separate univariate analyses were performed. The separate ordinal regression analysis for age and race both had a sufficient number of participants with complete data to generalize results to the study population. For this study population age did not have a relationship with health; while race was found to predict

health. However, the findings of the separate ordinal regression analyses for country or origin, ethnicity, and the number of years living in the USA could not be generalized to the study population due the insufficient number of participants with complete data for these variables.

Chapter V

Discussion

Introduction

The purpose of this dissertation study was to look at how factors associated with culture as identified in Leininger's Sunrise Model predict the health of refugees based on the number of years a population of refugees lived in their host country. This chapter first reviews the sample size and generalizability of the findings of the study. Next, this chapter discusses the justifiable central findings of the study in relation to the current literature and Leininger's Sunrise Model. This chapter concludes with discussions about the implications of this research, the strengths and limitations of this study, and future research needs.

Discussion

Study Sample and Generalizability. The study used a convenience sample that included a small number of Idaho's refugees in the study. The results of this study that pertain to the study sample are not generalizable. A total of 110 ($N = 110$) senior refugees living in Idaho participated in the Idaho Senior Refugee Interprofessional Holistic Health Project between September 2016 and February 2018, and were included in this dissertation study. Senior refugees age ranged from 50-96, with a mean age of 63. There were almost twice as many females ($n = 70$), as males ($n = 40$) in the study. It is estimated that 70% of refugees that live in Idaho are children or female (Idaho Office for Refugees, n.d). Refugees reported their country of origin from one of twelve countries either in Europe, Asia, or Africa. The study population sampled refugees from 12 of the 18 nations that resettled in Idaho (Idaho Office for Refugees, n.d.). Refugees reported one of four races; white, black or African American, Asian, or Hispanic or Latino. Four ethnic groups were reported in the refugee population; Bembe, Congo, Afghani,

and Not Hispanic or Latino, with the majority of refugees declaring their ethnicity as Not Hispanic or Latino. The majority of refugees who reported marital status were married ($n = 58$), with single ($n = 10$), divorced ($n = 1$), and widowed ($n = 16$). Finally, refugees reported living in the USA as short as one month and as long as 14 years. All but one refugee had lived in the USA less than a decade. Slightly more refugees had lived in the USA less than two years ($n = 38$), than refugees who lived in the USA two years or longer ($n = 42$).

Of the 110 refugees in the study, only 53 refugees reported demographic information on all cultural factors. Refugees volunteered to be a part of the Idaho Senior Refugee Interprofessional Holistic Health Project, and could choose not to answer questions they did not feel comfortable answering or did not want to answer. The variables marital status ($n = 85$), ethnicity ($n = 67$), country of origin ($n = 83$), and number of years living in the host country ($n = 80$) all had excessive amounts of missing values. The amount of missing values for multiple study variables exposed summary statistics to the potential bias. Due to this, the study findings with respect to the study questions containing these variables had a potential bias and the findings should only be applied to the refugees that completed the demographic variables in the study sample.

Research Question One. What is the association between self-rated health as measured by question one of the Health-Related Quality of Life (HRQOL) survey, and objective health indicators as measured by BMI and blood pressure in refugee populations? Analysis of the association between self-rated health, as measured by the HRQOL survey question one, and objective health, as categorized from BMI and blood pressure, found that there is not a statistically significant association between the two measures of health. Self-rated health and objective health did not match in the refugee population sampled for this dissertation study.

Previous studies have not assessed the association between self-rated health and objective health in refugee populations, but a research study assessed the association between self-rated health and objective health of Seniors citizens in Canada (Mossey & Shapiro, 1982). One question addressed self-rated health. The question asked, “For your age would you say, in general, your health is excellent, good, fair, poor, or bad?” (Mossey & Shapiro, 1982, p. 801). The reliability of this question was never directly tested, but other studies at the time were using this question to assess health perceptions (Mossey & Shapiro, 1982). Objective health variables were identified through medical health claims using physician diagnosis (Mossey & Shapiro, 1982). Finally, mortality was assessed through death registries (Mossey & Shapiro, 1982). Mossey and Shapiro (1982) found that there was an association between reporting poor self-rated health, health status and death.

The present study and Mossey and Shapiro (1982), both used one question with a five-point Likert rating to assess self-rated health. The questions were worded differently but asked participants to state their general health. The study conducted by Mossey and Shapiro used physician diagnosis through insurance claims and death registries to measure objective health. These measures confirmed objective health with physician diagnosis of disease or conditions, and/or death. My study only looked at objective health indicators such as BMI and blood pressure. A high BMI and an elevated blood pressure are risk factors for multiple chronic conditions, but I did not confirm disease or condition diagnosis of my study participants like Mossey and Shapiro (1982) did. The difference in how objective health was measured between the two studies could be one reason for the different results.

Self-rated health is often used as a proxy for objective health in health research in older populations (Dorly, Deeg, & Kriegsman, 2003). Mossey and Shapiro (1982) have been cited

often for why self-rated health can be used as a proxy for objective health due to the concordance they found between senior's poor health and their self-rated poor health (Dorly et al., 2003).

Prior to the present study, there had not been a study of refugees which assessed the alignment of self-rated health and a measure of objective health.

A literature review on refugee health recently found that both self-rated health and objective health were used as dependent or outcome variables in studies (Hadgkiss & Renzaho, 2014). Of the articles they reviewed, eight articles used self-reported health status, and ten articles looked at medical records and clinical databases to measure health (Hadgkiss & Renzaho, 2014). Both self-rated health and objective health have been used in research as dependent variables to study health outcomes in refugee populations (Hadgkiss & Renzaho, 2014). However, there had not been a study that looked at the concordance of the two types of measures. The finding from this study showed refugees' self-rated health using one question from the HRQOL was not associated with objective health categorized from BMI and blood pressure. For the refugee population in this study, the self-rated health measure was not a good proxy for the objective health measure. This finding suggests medical practitioners should be cautious when interpreting the findings from past studies of refugees that used self-rated health as a proxy for objective health.

Research Question Two. What is the association between years of living in the USA when categorized by years living in USA by decade and health of the refugees as measured by self-rated health and objective health indicators such as BMI and BP? Analysis of the number of years living in the USA and self-rated health found there was not a significant association. In addition, it was found that there was not a significant association between of the number of years

living in the USA and objective health. The findings in this study did not align with the findings from previous research.

Previous research found that the time spent in a host country was an essential factor in refugee health (Diaz et al., 2015). Diaz et al. (2015) found that refugees' objective health as measured by multimorbidity doubled for refugees with five or more years living in the host country. Norredam et al. (2014) also found that refugees reporting of chronic diseases increased with extended stays of five years or longer in Denmark. Finally, Elwell et al. (2014) found that refugees that lived longer (8 months or longer) in the USA reported slightly lower levels of self-rated health than newly arrived refugees (Less than three months). All of these studies measured the number of years living in the USA within different timeframes, but found that refugees continued to report poorer health the longer they lived in the host country. Because the length of the timeframe in the Elwell et al. (2014) study was shorter than the timeframe of the present study and the other studies had longer timeframes but similar results to the Elwell et al. study, a difference in the categorization of the number of years living in the USA cannot be the explanation for the different finding of the present investigation.

Instead, it is likely the results of the present study did not match the results of other current research looking at health and time in the host country because in this study only 73% of the refugees reported how long they had lived in the USA. The missing data values (27%) for the number of years living in the USA potentially biased the results of the present investigation. However, the result for this question does apply to the 80 refugees for whom data were available. While this study found no association between the number of years living in the USA and health, my study found a relationship between the number of years and objective health which will be

explain in the discussion of research question four, including how this result ought to influence nursing care.

Research Question Three. What are the separate associations between religion, gender, marital status, and country of origin to self-reported health as measured from the HRQOL survey question one and objective health indicators as measured by BMI and blood pressure, when examined by categories based on the number of years living in the USA? No statistically significant associations were found between gender, marital status, and country of origin to self-rated health or objective health when categorized by the number of years living in the USA. This research question was explored because refugees continue to report poor health after settling into host countries (Diaz et al., 2015; Norredam et al., 2014), but there was a lack of information about why.

This study tried to discover if there was an association between cultural factors identified from Leininger's Sunrise Model such as gender, marital status, and country of origin and health when looking at how long a refugee lived in the USA. These cultural factors were chosen because research found that gender is associated with health both biologically and socially (Ostan et al., 2012). Women report worse health worldwide but live longer than men (Ostan et al., 2012). The US Department of Health and Human Services (2007) found that married people report better health than unmarried people. Finally, Lopez et al, (2006) found that disease burdens vary for countries, and country of origin predicts health in terms of risk for chronic and non-chronic infectious diseases.

For the study population who answered questions regarding gender, country of origin, marital status, and the number of years living in the USA, these cultural factors did not relate to self-rated health or objective health indicators regardless of how long refugees lived in the USA.

The results for this question would not be expected from Leininger's Culture Care Diversity and Universality Theory. Leininger believed that culture influences health behaviors, care practices, and health outcomes (Leininger, 1991). The findings from this question showed that gender, marital status, and country of origin were not related to health in this selected refugee population and the lack of association did not change regardless of time spent in the USA for refugees whom data were available.

Unfortunately, the findings from this research question could neither confirm nor deny associations between gender, country or origin, and marital status with health when categorized by the number of years living in the USA. The analysis for question three lacked the needed statistical power. This was due to the missing data for the variables marital status, country of origin, and the number of years living in the USA. The results of question three indicating no associations may not represent a finding for the study population or other populations of refugees. The finding of no association can only be applied to the refugees who answered the questions regarding gender, health, marital status, country of origin, and the number of years living in the USA. No implications to current practice can be drawn from this question because this result is questionable, and can only be applied to a small number of refugees in my study population,

Research Question Four. What relationship does religion have on self-rated health as measured by question one of the HRQOL survey, and objective health indicators as measured by BMI and blood pressure, when gender and years living in the USA are controlled? The analysis of gender, the number of years living in the USA, and self-rated health, found that there is no relationship between the three variables. Analysis of the combined relationship of gender with number of years living in the USA and objective health indicated there was a relationship. A

weighted combination of gender and the number of years living in the USA did not predict self-rated health, but they did predict objective health. Separate analyses indicated that gender did not relate to objective health, but the number of years living in the USA was found to be a key predictor. Unfortunately, these findings can only be applied to the refugees from whom these data were available.

Current research shows both gender and the number of years living in the USA influence health. Leininger studied gender cultural norms and behaviors around the world to understand how gender influences health. Women report worse health (Ostan et al., 2012), more mental health problems (Haldane & Hickerson, 2016), and health was influenced by societal norms (Saadi et al., 2015; Ussher et al., 2012). Saadi et al. (2015), and Ussher et al., (2012) also found that women were inattentive to their needs because they would not address issues, such as health or reproductive issues, until other family needs were met. Women prioritize needs based on the family, and often women's needs are met last (Ussher et al., 2012), leading to poor health (Ostan et al., 2012). This study however; did not find a relationship between health and gender.

The other variable looked at in question four was the number of years a refugee had lived in the USA. This study found a relationship between objective health indicators and the number of years living in the USA for refugees whom data were available. This study does align with current research in finding a relationship between health and the number of years a refugee lived in the host country. The difference in this study and previous research is the direction of the relationship. This study found that refugees who had lived longer than two years in the USA reported better health than newly arrived refugees. Research conducted by Diaz et al. (2015), found that multimorbidity doubled for refugees who had lived in the USA more than five years. Norredam et al (2014) also found that while refugees' chronic disease rate was lower than

Denmark on arrival to the country, within five years report chronic disease such as heart attack and ischemic stroke increased for refugees.

One reason for the differences in findings between this study and the studies conducted by Diaz et al. (2015), and Norredam et al. (2014), was the study population. Diaz et al. (2015), and Norredam et al. (2014) both used national registry data for refugees. The studies conducted Diaz et al. (2015), and Norredam et al. (2014), both had a study population that was more representative of the refugee population in their country. The secondary data used in this study was convenience sample of refugees that had either seen a healthcare provider, was working with a refugee resettlement agency, or used a translator in the community. Hence, this study population was not a representation of the refugee population in Idaho.

Even with the lack of generalizability of this finding to my study population, these results showed that established refugees report better health than newly arrived refugees. Established refugees had access to healthcare in the USA. My study did not look at whether healthcare was utilized by refugees, but to be included the Idaho Senior Refugee Interprofessional Holistic Health Project refugees saw a healthcare provider or used community resources for refugees.

Refugees in this study that were using community resources reported better health after living in the USA for two years or longer. There are numerous community resources that refugees could use to seek help for their health. Nurses could be a valuable member of these community teams if they are aware of them. Nurses could benefit from learning about refugees and the community resources available to refugees.

Nursing education could benefit from community education on refugees. Currently nursing students complete a course in community health where they learn about working outside of the hospital to care for patients and families (Feenstra, 2000). Community health classes

could expand to include information on refugee health and the importance of community healthcare and resources, and how when refugees use community resources and care, better healthcare outcomes are reported. Bringing awareness to how community resources can impact refugee health may entice nursing students look for community jobs upon graduation.

Another reason why this finding differed from current research is that my objective health was measured by BMI and blood pressure, while both Diaz et al. (2015) and Norredam et al. (2014) used diagnosis of a chronic disease as their measure for objective health. While BMI and blood pressure are risk factors for multiple chronic disease; having a high BMI or blood pressure is not the same thing as being diagnosed with a chronic disease. The difference in dependent variable measurements could also account for the different findings.

Research Question Five. What relationship does gender have on self-rated health as measured by question one of the HRQOL survey, and objective health indicators as measured by BMI and blood pressure, when years living in the USA and ethnicity are controlled? The variable ethnicity was added to question four to understand how culture affects the health of newly arrived refugees and refugees living in the USA longer than 2 years. The finding for this question did not reveal a combined relationship of gender, number of years living in the USA, and ethnicity with self-rated health as measured by question one of the HRGOL survey. In addition, the finding did not support the combination of gender, number of years living in the USA, and ethnicity as predictors of objective health as categorized from BMI and blood pressure. Gender, ethnicity, and the number of years living in the host country were not shown to have any relationship with health for the refugees that answered the corresponding questions. This finding does not align with the current research literature, (Diaz et al., 2015, Hadgkiss &

Rexzaho, 2014; Ostan et al., 2012; Wong et al, 2010), all of the prior studies found that gender, ethnicity, and the number of years living in the USA were linked to health.

In refugee populations, the relationship of gender to health is unclear because it is often linked to other cultural factors such as ethnicity and religion. Women are the caretakers of the family and are often inattentive to their own needs (Saadi et al, 2015). Modesty can be important in Muslim Islamic religion and Christian religions for women which can prevent them from discussing health issues with male healthcare providers or having physical exams (Mujallad & Taylor, 2016). Unfortunately, only 67 refugees reported their ethnicity in my study. The missing values for ethnicity and the number of years living in the USA decreased the sample size for this research question. With the reduced sample size, the ordinal regression analysis lacked statistical power. Hence, the combined influence of gender, ethnicity, and the number of years a refugee lives in the USA on health is still unclear for this study population. Because of this, a separate ordinal regression was conducted for ethnicity and health.

When examined separately, ethnicity was still not found to have an association to either self-rated health or to objective health for the refugees for whom data were available for their ethnicity. Again, this finding contradicts the previous research literature. Hadgkiss and Rexzaho (2014) and Wong et al. (2010) found that ethnicity influenced health. One reason why this finding is different than the finding in Hadgkiss and Rexzaho (2014) is that almost all the refugees in my study reported the same ethnicity. This study was unable to determine if there was a relationship between ethnicity and health because the refugees in my study who chose to respond reported essentially the same ethnicity.

Research Question Six. What relationship does years living in the USA have on self-rated health as measured by question one of the HRQOL survey, and objective health indicators

as measured by BMI and blood pressure, when age is controlled? Analysis of the combined relationship among the number of years living in the USA, and age with self-rated health as measured by question one of the HRGOL survey did not show a statistically significant relationship. In addition, analysis of the combined relationship among the number of years living in the USA and age with objective health as categorized from BMI and blood pressure did not show an overall relationship. However, the slope coefficient for the number of years living in the USA was statistically significant. To follow up, separate ordinal regressions between age and health and the number of years and health were performed. The influences of the number of years living in the USA was discussed in question four.

Analysis of the relationship between age and health (self-rated and objective health) did not indicate a relationship in the present population. Age did not explain or predict either self-rated health or objective health. The relationship between age and health is well documented; health declines as people get older. Yun et al. (2012) found that refugees report more health problems, including chronic diseases at a younger age, than the populations of their host countries. Diaz et al. (2015) also found an overall association between age and poor refugee health. Older refugees had more chronic diseases. One reason for the difference in this study finding to both Yun et al. (2012) and Diaz et al. (2015) was that this study population was older. The study population for this study was 63; while the study conducted by Diaz et al. (2015), mean age of refugees was 36.2 years, and the median age for refugees in the study conducted by Yun et al. (2012) was 31. The difference between the mean ages in Diaz et al., Yun et al. and this dissertation could explain why the results of the two studies were different. This study population was significantly older than other research studies looking at refugees. This study looked at senior refugees that already reported poor health, where these other studies looked at

younger refugees where health status was more varied. Nurses taking care of refugees in from this study population need to be educated to understand that these senior refugees reported poor health and age did not affect health status.

Research Question Seven. What relationship does country of origin have on self-rated health as measured by question one of the HRQOL survey, and objective health indicators as measured by BMI and blood pressure, when ethnicity and race are controlled? The present study found that country of origin, race, and ethnicity did not have a combined relationship with either self-rated health or objective health. Refugees country of origin, race, and ethnicity did not predict the self-rated health or the objective health of refugees that answered these questions. The variables of ethnicity and country of origin had multiple missing values that may have compromised the validity of this finding. Due to the small number of refugees with complete data for all of the variables, I conducted separate ordinal regressions for ethnicity, country of origin, and race for both self-rated health and objective health. The results for ethnicity were discussed in question five.

With respect to the country of origin, the findings indicated that country of origin did not predict self-rated health or objective health for refugees whom data were available. This finding did not align with current research. Leininger's Sunrise model includes the factors, lifestyle and economic, and their influence on health (Leininger, 2001), which are influenced by a refugee's country of origin. Globally, infectious and chronic diseases are measured by country (Lopez et al., 2006). Refugees come from war-torn countries where health infrastructure is limited, and the disease burden is high (Lawrence & Kearns, 2005). Wong et al. (2011) showed that country of origin continued to impact refugee health after they arrived in the host country. This study only had two classifications for country of origin reflecting the continents, Eurasia and Africa. Wong

et al. (2011) and Lopez, et al. (2006) both analyzed more categories for the variable country of origin. Wong et al. (2011) specifically looked at countries in Asian and Lopez et al., (2006) look at the global burden of disease. The original intent was to look at country of origin, but with the study's sample size this study ended up with nominal categories based on the refugees' continent.

Finally, it was found that race did explain and predict self-rated health but not objective health in the refugee population in my study. When combined into a single category, Native American, Asian, and Black/African American refugees reported worse health than white refugees. The finding of a relationship to health is consistent with current research literature (Williams, 1994). From the results of this research question, it is clear that race influences self-rated health for my study population. Again, my study had broad categories on race, but refugees who reported race as white had better self-rated health than refugees who reported race as other than white. Consistent with the Leininger's Sunrise Model, this finding supports the idea that cultural factors influence people's assessments of health. When working with refugee populations, it is thus important for nurses to understand the relevant cultural background factors of their patients, such as the refugee's race, so they will be able to support their unique needs in order to improve their general health.

Refugees that identify themselves as other than white view their self-rated lower than their objective health. During hospital stays and outpatient clinic visits nurses could to spend some additional time educating refugees about their health and why they may feel their health is worse than it is. Nurses can spend some time understanding why refugees view their health as poor and then educating refugees on their actual health. It is important that this education to specific to the refugee to address the differences in their perceived self-rated health and actual

objective health. Nurses need to discuss health conditions and concerns that refugees have. Providing knowledge about disease conditions, treatment, and management may help to alleviate the refugee patient's fear of poor health. This education may help refugees who identify race as other than white to align their self-rated health with their objective health.

Strengths and Limitations

A strength of this dissertation study was the use of the HRQOL survey tool, which is a well-known survey tool. This tool has been used in multiple studies to assess self-rated health. Another strength of this study was that both subjective data and objective data was used to analyze health. Two components of health were analyzed for each question to understand the complex meaning of health in refugee populations.

There were several limitations in this study. One limitation of this study is the use of secondary data. The Senior Refugee Health Project identified a study population and the variables to collect in their study. Only refugees who were seeing a health care provider, involved with refugee resettlement programs, or working with interpreters in the community were sampled. Whether or not refugees understand the healthcare system in the USA was not studied. Madeline Leininger's Culture Care Diversity and Universality Theory was the study's theoretical framework for the dissertation study but not for the main study. Not all factors from Leininger's Sunrise Model that were specified in the model to influence culture and health could be studied in this investigation because this study used secondary data. Variables for factors including technology, education, and socio-economic status were not collected in the main study and therefore could not be examined in this study. While both marital status and the way quality of marriage affect health are important, due to the original Senior Idaho Refugee Project's collected data, only marital status could be assessed in this study.

Independent variables were categorized into two variables. Two variables were used because of the small sample size. With only two categories the variables country of origin and race were less specific. Refugees who participated in this study reported 12 different countries of origin. Because of the sample size, this study could not look at specific countries or even regions. Instead of looking at country of origin, this variable was classified to continent of origin. Cultures vary between country and because multiple countries were grouped together this study was unable to examine how each specific country of origin explains health

Another variable that was not specific in this study was race. Race was categorized into two variables (1) white and (2) other. Refugees who identified as either Black/African American, Hispanic or Latino, or Asian were classified as other. While this study found that race explained self-rated health; no specific race could be identified as explaining health. A study with a larger sample size would have allowed for more than two categories for independent variables while meeting the need statistical power.

Another limitation was using subjective data as the dependent variable. A well-known survey tool was used to assess self-rated health; however, only one question of the survey was used to assess self-rated health. The reliability of the first four questions of the HRQOL survey were assured by testing the Cronbach's coefficient alpha. However, the reliability of using only question one is unknown. Subjective data is not as precise a measurement as objective data. However, the use of subjective data allowed for the measurement of self-evaluations with regard to the health of a senior refugee population.

Objective health data was measured by BMI and blood pressure. BMI and BP values are risk factors for chronic diseases; however, individuals with high BMI and elevated BP readings may not be diagnosed with chronic diseases. Using indicators for objective health instead of

actual disease diagnoses may have decreased the accuracy of the objective health variable in this study. Since this dissertation was approved, new hypertension guidelines have been developed (Rubenfire, 2017). Future research may want to consider using the new guidelines when measuring blood pressure. This dissertation study employed a cross-sectional design. Thus, health was assessed at only one point in time.

The biggest limitation was that the results were potentially biased due to the large amounts of missing data values. The missing data values also decreased the sample size for research question three, research question five, and research questions seven. These research questions lacked the sample size needed to determine statistical significance. The results of these study questions can only be applied to the refugees in the sample that provided information regarding demographic variables.

Implications in Research

This research study questions how health in senior refugee populations should be measured. Self-rated health was not a good proxy variable for objective health in my study. Nurses providing care to refugees in my population should not rely on how a refugee feels about their health. When reading studies regarding refugee health nurses also need to be cautious about findings if self-rated health was used instead of objective health.

This study also found that refugees who had been living in the USA longer than two years reported better health. Refugees had access to community resources and healthcare that was not available in their country of origin. There is an opportunity for nursing to collaborate with refugee community resources. Refugees are screened before coming to the USA, and receive help for the first eight months (Idaho Office of Refugees, n.d.), but after eight months, refugees use healthcare in the USA like everyone else. Nursing could work with refugee

resettlement agencies to provide health screening and education to refugees after their resettlement period. Education could include information about the USA healthcare system, common conditions or diseases refugees may have, treatment options, and resources in the community that refugees can use. Education could be provided in a group activity or individually based on the refugees needs. Nurses could educate refugees on their objective health and their view of their poor self-rated health.

For nurses to work with the refugee resettlement agencies, nurses need to understand refugee health. Nursing education in community health currently teaches nursing students about the importance of treating individuals and families in the community before a hospital is needed; however, refugee health is not usually discussed. To strengthen community health and the benefit community resources have on health; refugee education could be included in community health classes.

Education could include information about the cultures of common refugees found in the community, refugee resettlement information, information about race and cultural sensitive information about race and health. Nursing students need to understand the complexity of refugee care and how community resources play an important part of providing quality care to refugees.

Conclusion

This dissertation study found that the study population's self-rated health was not associated with their objective health. Currently there is no standard to measure health in refugee populations. Based on the research design, researchers choose to look at either self-rated health or objective health. Objective health is a more accurate measure of health, but self-rated health is often easier to obtain. Self-rated health should not be used as a proxy variable for

objective health indicators in refugee populations based on the findings of my study sample. More research in the association of self-rated health and objective health indicators needs to be performed because the results of my study question whether self-rated health should be used as a proxy for objective health indicators.

This dissertation study was able to determine that the number of years living in the USA influences objective health indicators for refugees on whom data were available. Established refugees reported slightly better health than newly arrived refugees. Refugees in this study were either seeing a provider, or using the help of refugee resettlement agencies, or using community translators, and that may be one reason why refugees in my study better health after becoming established in the USA. Age did not have a relationship with health. This study sample was comprised of senior refugees and the majority of those refugees reported poor health. Finally, this study found that race did influence self-rated health in my study population.

Refugee care is complex. Multiple factors such as religion, age, gender, country of origin, race, ethnicity, marital status, and the number of years living in the USA, were found to influence health in refugee research. Factors such as marital status, gender, country or origin, and ethnicity identified from identified in Leininger's Sunrise Model did not influence health in the refugees for whom data were available. In this study, cultural factors other than race did not predict health in the refugees for whom data were available. My study results do not align with Leininger's Sunrise Model. For the refugees on whom there was data, culture did not influence health. While my study found that race predicts self-rated health, the variables religion, country or origin, ethnicity, and marital status had missing data values that biased my results. This bias is one reason these results did not align with Leininger's Sunrise Model. This study sample was obtained through a convenience sampling method and with the missing data values my study

results are not generalizable to a larger refugee population. While my study did not find that culture affects health in refugees, current research studies show that refugee's culture and health are related.

Future Research

Studying culture and health with a quantitative study design was challenging. Culture is the ideas and customs of a country and it was hard to identify variables represented a specific cultural idea or custom. If culture and health are studied again in refugee populations the use of a qualitative study design might be more appropriate. Using a qualitative research design would allow the refugee to explore specific beliefs and customs that directly impact health.

Madeline Leininger developed a qualitative research method called ethnonursing that focuses “on naturalistic, open discovery, and largely inductive modes and processes with diverse strategies, techniques, and enabling guides to document, describe, explain, and interpret people's worldview, meanings, experiences, symbols, life experiences, and other related aspects as they bear on actual or potential nursing care phenomena” (McFarland & Wehbe-Alamah, 2015, p. 37). The goal of ethnonursing is to discover cultural-specific beliefs and values that influence health (McFarland & Wehbe-Alamah, 2015). This unique qualitative research method identifies both emic or insider information from the culture and etic or outsider information to understand how cultural influences health (McFarland & Wehbe-Alamah, 2015).

Researcher's that incorporate ethnonursing create a relationship with community members to understand how culture influences health. The relationship that develops between researchers and participants creates an environment of information sharing (McFarland & Wehbe-Alamah, 2015). These trusting relationships allow researchers to understand the

influence culture has on health. Creating a relationship where health and cultural information could be shared with researchers would have decreased the limitation of missing data.

This dissertation study looked at refugees from multiple different countries and cultures, but specific cultures could not be examined in-depth. A deeper understanding of refugee health and the influence of culture could thoroughly be examined if ethnonursing is used on a specific cultural group instead of many. Researchers would have the ability to examine in detail how a specific culture influences health and cultural factors that are important when healthcare is provided (McFarland & Wehbe-Alamah, 2015). This would allow for a more meaningful and informative look at research and health. Using the qualitative ethnonursing approach to study culture could provide answers on why refugees who identified race as Black/African American, Hispanic or Latino, and Asian report lower self-rated health because researchers could explore refugees view of their health.

Along with a more detailed examination of culture and health; the association of self-rated health and objective health needs to be explored further. This study looked at objective health indicators in a small population in Idaho. Objective health was measured by health indicators instead of disease diagnosis which would have been a more accurate measure. A larger study looking at self-rated health and objective health in terms of disease diagnosis, condition, or death, would provide a clearer understanding of the association between self-rated health and objective health in refugee populations. In research, it is important to have an accurate measure of health. Assessing whether self-rated health can be used as a proxy for objective health in refugee populations will influence how refugee populations are studied going forward.

Additional studies looking at the number of years living in the USA and health in refugees are areas for future research. My study looked at a convenience sample of refugees who may have seen a healthcare professional, or used the services of a refugee resettlement agency, or used a community translator. There is a need to understand which community services provide the most benefit to refugee health. A future study looking at refugee health and what community resource refugees used before a referral to a primary care provider to could provide information on what community resources in Idaho are helping established refugees seek healthcare. These refugees should be followed after they stop receiving the community services and see if the positive health effect is still present.

Researchers also need to look at a random sample of refugees in the Idaho community to understand how the number of years in the USA affects health for both refugees that have seen a primary care provider and refugees who do not see a primary care provider. Barriers to health for refugees in the USA have been studied in-depth, but how refugees utilize healthcare in Idaho is not well understood. There is a need to understand what resources refugees use in Idaho communities and how healthcare providers including nurses can increase the participation and quality of these programs for refugees.

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