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Impact of Social Economic Factors on U. S. Veterans' Access to Care

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This is to certify that the doctoral study by

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2020

Abstract

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MHA, Walden University, 2016

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Doctoral Study Submitted in Partial Fulfillment

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Abstract

Coronary heart disease (CHD), the leading cause of death worldwide, affects about 8.45 million United States veterans, individuals honorably discharged from the active military, naval services, and air services. The purpose of this study was to determine whether veterans' access to care is associated with income level determinants, such as job status, education level, and location. Using the social cognitive theory as the framework, the study examined the extent to which income level and the other social determinants, impacted access to care for veterans with CHD. The 2016 Behavioral Risk Factor Surveillance System, the nation's leading data system was the selected database for the research. The database consists of 275 variables, including Survey of Metropolitan/Micropolitan Area Risk Trends MMSA data. The trends survey was comprised of 486,000 participants. Among them were 63,919 veterans. The chi-square method was used for the interpretation of the analyses. The veterans' responses were used to determine whether there was correlation to identify the extent to which socioeconomic factors impacted access to care among a population with CHD. The findings suggested that these social determinants did not influence the ability of veterans with CHD to access care. Findings of this study could be used to better understand the needs of veterans who have limited or no access to care.

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Dedication

I will like to dedicate this dissertation to my awesome late mother, Obaapanyin Mary Akosua Boahemah for encouraging me on the academic journey. Special love and thanks to my children Agnes Adjei Ofori, Peprah Adjei Ofori, Abena Oforiwah Adjei Ofori, and Nana Oppong Adjei Ofori for cheering me on to success.

I extend a special thank you to Dr. Stephen L. Meigs (Committee Chair) for the encouraging words, guidance, and never giving up on me. Thank you to Dr. Tami Lewis (the former Committee member) and Dr. Robert Hajazi (the current Committee member) for encouraging feedback to keep me reaching for completion of this dissertation.

Thanks to the members of my ethnic lineage (Agona /Ayokoo) clan of Akim Anyinasin. My belated father Anyinasin-hene Osabarima Nana Oppong Aboagye I of Akim Anyinasin and my grandfather Agona-hene Nana Anim Owusu Adjei of Akim Anyinasin of Ghana for contributing to my inspiration to complete my doctorate degree.

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Section 1: Introduction to the study

In the current literature, there is evidence of socioeconomic issues limiting access to medical care among some U. S. veterans (Department of Veterans Affairs, 2018). Coronary heart disease (CHD) is one of the leading medical conditions among United States veterans, affecting 8.45 million (Krishnamurthi, Francis, Fihn, Meyer, & Whooley, 2018). The purpose of this study was to determine whether access to care among veterans with CHD is associated with income-level determinants, such as job status, education level, and location. The outcomes from this study may reveal how income level, education level, employment level, and location impact the ability of veterans to sustain access to care. This study may also be used to promote positive social change among veterans. I sought to evaluate gaps in the literature on the extent to which factors such as income level, job status, education, and location are associated with access to medical care among veterans with CHD (Gabrielian, 2014). This study is important because understanding the influence of social determinants (such as job status, education level, location, and income level) on access to care for this group may help improve their health outcomes and quality of life, as well as promoting positive social change. The Veterans Health Administration (VHA), Veterans Benefit Administration (VBA), federal law makers, other veterans' services organizations, health care institutions, and the general public could use the outcomes of this study to understand the extent to which income level, educational level, employment status, and location impact some veterans' access to care.

Section 1 covers the following topics: the problem statement, purpose, research questions/hypotheses, theoretical foundation, nature of the study, literature review, definitions, assumptions, limitations, scope, and delimitations.

Problem Statement

The social problem in this study is access to medical care for veterans suffering from CHD. This study sought to determine whether job status, education level, and location were determinants of income that could impact access to care for veterans with CHD. Cardiovascular illness is a burden on society; it is one of the leading causes of death in the United States, with an estimated 58,000 deaths, as reported by the American Heart Association (Mozaffarian et al., 2017). Veterans represent a significant portion in the population affected by CHD (Krishnamurthi et al., 2018). In fact, veterans have high cardiovascular disease risk factors as compared to the nonveteran population (Fryar et al., 2016). According to a Department of Veterans Affairs report, 8.45 million United States veterans with were affected with CHD in 2017 (Krishnamurthi et al., 2018). In 2017, a survey estimated 92.1 million people in the United States have at least one type of cardiovascular disease (Benjamin et al., 2017). Income-level determinants such as job status, education level, and location, may affect the veterans' access to health care (Gabrielian, 2014). This research explored the extent to which job status, education level, and location affected veterans' access to care. It addressed a knowledge gap in the literature on the extent to which income-level; job status, education, and location are associated with access to care of veterans with CHD. There are studies that suggest the impact of these factors in other populations, but little has been published on the impact of

these factors on access to care for veterans with CHD. The Patient Protection and Affordable Care Act (ACA) assisted some groups gain access to care (non-Whites, young adults, unmarried individuals, those without a college degree, and some veterans), however it did not focus on the veteran population (Courtemanche et al., 2016). Although access to care has improved through the ACA, there is little evidence in the current literature that quantifies this improvement for veterans suffering with CHD.

Purpose of the Study

The purpose of this quantitative study was to determine whether veterans' access to care is associated with income-level determinants such as job status, education level, and location. This study is important because understanding the influence of social determinants such as job status, education level, location, and income-level on access to care for this group may help improve their health outcomes and quality of life.

The dependent variable in this study was veteran status with a covariate of CHD. The independent variables for this study were income-level, employment level, educational level and location. This study quantitatively examined how income level determinants, such as job status, education, and location, affected access to health care for veterans with CHD. The findings of this study could help the VHA better support the veteran community. (The VHA is the federal government institution that is responsible for the health and well-being of United States veterans. Its responsibility includes assessing and supporting low-income veterans who have problems with access to care.) The findings could also improve understanding of veterans' issues underlying access to care by the VHA, by federal health agencies and by the general public. According to

Benjamin et al., (2017) the inadequate resources available in the medical profession to treat the CHDs have been challenging. Findings from this research could also be used to improve access to care for veterans who need it.

By providing routine cardiovascular screening and a standard of care that accords with the AHA guidelines, the effects of this disease on health, income level, and the economy could be minimized (Nishimura et al., 2017). In 2013, CHD was the most common underlying cause of death, accounting for an estimated 17.3 million deaths worldwide (Benjamin et al., 2017). Cardiovascular disease medications such as aspirin, statins, surgery and blood pressure-lowering agents remain cost-effective treatment which impact veterans with CHD (Gabrielian, 2014).

Research Questions and Hypotheses

For this research study, there were two research questions which were based on the 2016 BFRSS database selected variables and codes with four hypotheses for each question.

Research Question 1: Among veterans with CHD, to what extent are employment status, education level, and level of income associated with little or no access to health care for CHD?

H_01 There is no significant association between “ever diagnosed with angina or coronary heart disease” and “educational level”

H_a1 There is a significant association between “ever diagnosed with angina or coronary heart disease” and “educational level”

H_0 2 There is no significant association between *ever diagnosed with angina or coronary heart disease* and *income-level*

H_a 2 There is a significant association between *ever diagnosed with angina or coronary heart disease* and *income-level*

Research Question 2: Among veterans with CHD who are assessed as low-income, to what extent are employment status, education level, and level of income associated with routine checkup/delayed getting medical care?

$H_0 1$ There is no significant association between ever diagnosed with angina or coronary heart disease and length of time since last routine checkup

$H_a 1$ There is a significant association between ever diagnosed with angina or coronary heart disease and length of time since last routine checkup

$H_0 2$ There is no significant association between *ever diagnosed with angina or coronary heart disease* and *delayed getting medical care*

$H_a 2$ There is a significant association *between ever diagnosed with angina or coronary heart disease* and *delayed getting medical care*

Theoretical Foundation

The theoretical foundation for the research was the Marmot, Shipley, and Rose (1984) Whitehall studies based on social-cognitive theory (SCT). SCT considers social determinants like employment inequalities, educational level, income constraints, and locality as critical indicators of prosperous living (Marmot et al., 1984). SCT social determinants, which were adapted by Marmot et al. (1984) for the Whitehall study, showed a steep inverse relation between the level of social status and CHD mortality

(Marmot et al., 1984). McGinnis and Foege (1993) used SCT to conclude that half of all deaths in America were related to behavioral factors (health-related behavior), which depended on social factors, such as income-level, education, employment status, and location. The SCT framework used by McGinnis and Foege (1993) and Marmot et al. (1984) has a fundamental relationship with social determinants used in this study.

The SCT associated with Marmot's et al. (1984) identified standard of living as a measure of social status in a community (Marmot et al., 1984). The SCT covers a wide range of problems commonly associated with human reaction, motivation, and behavior pattern among individuals in a society (Bandura, 1986). SCT involves human advancement affecting nature, scope of socioeconomic development, and examined the determinants of social changes (Bandura, 1986). Marmot et al.'s (1984) SCT focused on lifestyle that favors individuals of high social class (the rich) as compared to their poorer counterparts. The income-level determinants impacted by lower social standing (the poor) who are susceptible to CHD risk factors have limited access to care (Marmot et al., 1984).

SCT involves with unresolved social class inequalities, health inequalities, and risk factors associated with income-level determinants, which are relevant to this study (Marmot et al., 1984). Here, SCT is used to determine the difference between higher social class and lower social class, which impacts the prevalence of CHD risk factors among the poor (Marmot et al., 1984). The application of SCT in the present study of CHD patients' illuminates access to care in connection with socioeconomic factors that result in a lower quality of life (Marmot et al., 1984).

McGinnis and Foege (1993) SCT theoretical framework of behavioral factors associated with socioeconomic determinants of income level does not have as strong a foundation as that of Marmot et al. (1984). Furthermore, Bandura (1986) proposed the SCT framework for several disciplines including education, psychology, sociology, communication, political science, business, law, and social science which were not discussed here. These disciplines have a positive effect on socioeconomic development among individuals in a community. SCT has proven useful in determining the fundamental scope of socioeconomic factors such as income level, employment status, educational level, and location, which were relevant with this study.

The Marmot et al. (1984) SCT was selected due to its accuracy, and basis in connection with the concept of income-level determinant relevant to this study. SCT defines the relevancy of social class among individuals living in a community and the effect of socioeconomic factors that favor the rich and deprive the poor of better living.

Nature of the Study

That CHD affects 8.45 million United States veterans makes understanding factors impacting access to care for this population important and is the basis for this study. Standardizing access to care is a process many healthcare entities undertake (Veterans Health Administration [VHA], 2018). To be effective in providing care needed in CHD treatment, there is the need for a recognized standard of care (Nishimura et al., 2017). CHD treatment is expensive and complicated; there is the need to implement measures to minimize the condition. Personal management practices to reduce risk factors, meeting high cost involving medical care, and specialty care for veterans' with

CHD is essential (Lamendola et al., 2018). The Coronary Artery Disease Reporting and Data System (CAD-RADS) is a standardized method used to communicate outcomes of coronary disease to ensure decision-making regarding continuous care (Cury et al., 2016). CAD-RADS tool is used to examine CHD condition and it also provides improved medical knowledge for physicians to determine the right treatment for the disease, including bypass surgery when necessary (Cury et al., 2016). The CHD condition has a high mortality rate, killing an estimated 17.3 million globally (Benjamin et al., 2017). Veterans' access to healthcare for CHD and how health disparities among veterans with the condition affect their access to care are the primary concerns for this research. The purpose of using a quantitative, cross-sectional, correlational study was to identify the extent to which socioeconomic factors impacted access to care among a population with CHD. From my secondary data source, I extracted data on veterans as the dependent variable, presence of CHD as covariate variable, and socioeconomic factors as independent variables for the analysis. This approach may assist to validate treatment guidelines to support better medical standards for healthy living and access to care (Nishimura et al., 2017).

Literature Review

Search Strategy

To identify prospective, peer-reviewed articles (as well as books and grey literature), the following electronic databases were searched for the years 2014-2020 (legacy journals dating back to 1974 were used to develop a historical context of SCT): Walden University Library Books, Web of Science, ScienceDirect, Medline, PsycINFO,

Dissertation and Theses, ProQuest, Taylor and Francis Group, Google Scholar, and ABI/INFORM, Cumulative Index to Nursing and Allied Health Literature and the Cochrane Database of Systematic Reviews. Other resources included the World Health Organization (WHO), Centers for Disease Control and Prevention (CDC), American Heart Association, and the VHA.

A systematic strategy with diligent endurance was used to guide this literature search from the websites mentioned above.

The following keywords were used to search the contents: *veterans, cardiovascular diseases, access to care, socioeconomic, health standards, measurement of care, health insurance, Patient Protection and Affordable Care Act reform, demography, treatment of CHD diseases, self-management, race/ethnicity, statistics, income level, social cognitive theory, innovations, population, health disparities, health inequalities, Medicaid, Medicare*.

The selected journals and articles reviewed provided a broad spectrum of knowledge for this study. I developed the following topics from the search: Historical development of access to care in the United States, Veterans Health Administration, Patient Protection Affordable Care Act (ACA), Access to care, Standard of care in the United States healthcare system, Military veterans and Coronary Heart Disease.

Literature Review Related to Key Variables/Concepts

This section contains the discussion of variables (dependent and independent) which may play an essential part of the United States military veterans with CHD conditions having limited access to care. The dependent variable (are you a veteran) and

the independent variables (income level, job status, education level, and location) are applicable in this study. The purpose of this study is to determine whether veterans' access to care is associated with income level determinants such as job status, educational level, and location. The findings of this study may help improve veterans' health outcomes, quality of life, and assist the VHA in better supporting this community.

Income Level

Income is the monetary gain of resources involving gross salaries, wages, overtime earnings, commissions, and bonuses (Chiswick, 1974). The socioeconomic standards of a country classify the level of income of the citizens based on the annual net income (the gross income minus taxes and other expenses) in monetary value (Chiswick, 1974). The United States military veterans who live in the rural areas are more predisposed to lower income levels and less education as compared to their counterparts who reside in the urban communities (Hill et al., 2017). In 2014, the U.S. military veterans between the ages of 18 and 64 years had higher chances of been unemployed, seeking employment, no college degree, and belonging to households with yearly income below $75,000 than their well-educated counterparts of the civilian population (Hill et al., 2017).

Table 1 below shows income information on veterans, to include median earnings, and median personal income respectively (Department of Veterans Affairs, 2018). This data reveals the median earnings of annual income by gender and veterans' status. The pre-9/11 males have the highest earning of $59,977, as compared to male nonveterans with $49,907 (DVA, 2018). The pre-9/11 female veterans' status earned

$48,935 annually income as compared to their counterpart female nonveterans with estimated annual income of $39,932 (DVA, 2018). There is an indication that both male and female veterans have better earnings than their counterpart male nonveterans and female nonveterans respectively. There is evidence that military veterans have advantage of obtaining employment making more earnings than their counterpart civilians, due to special traits among veterans such as leadership skills, motivation, attention to details and readiness towards employment (DVA, 2018).

Table 1

Median Earnings by Gender and Veteran Status

Sex and veterans status	Median earnings of year-round	Sex and veterans status	Median earnings of year-round
Pre-9/11 male-veterans	$59,977	Pre-9/11female-veterans	$48,935
Male nonveterans	$49,907	Female nonveterans	$39,932

Note: Periods of service shown here are coded with multiple dispersed into categories with most recent period of service. *Source: U.S. Census Bureau, American Community Survey PUMS, 2018 Prepared by the National Center for Veterans Analysis and Statistics*

Income level is one of the independent variables used in the Statistic Package of Social Science (SPSS) software to interpret the findings of the multiple regressions model. The hypothesis findings identified the confidence interval (CI) and infer the conclusion of the results by gender and veteran status. Table 2 lists the median personal income of year-round, full-time workers by sex and veterans' status (DVA, 2018).

Table 2

Median Personal Income by Sex and Veteran status

Sex and veterans status	Median earnings of year-round	Sex and veterans status	Median earnings of year-round
Pre-9/11 male-veterans	$53,280	Pre-9/11 female-veterans	$38,212
Male nonveterans	$29,989	Female nonveterans	$19,029

Note: Median personal income by gender and veteran status shown here was coded with multiple dispersed into categories with most recent period of service.
Source: U.S. Census Bureau, American Community Survey PUMS, 2018
Prepared by the National Center for Veterans Analysis and Statistics

Job Status

The definition of job status refers to an individual who is actively employed and receives an income for the services delivered (DVA, 2018). Unemployment is common among veterans, including those affected with CHD conditions (Hill et al., 2017). Table 3 below reflects pre-9/11 men veterans' occupation employed as compared to their nonveterans counterparts (DVA, 2018). Approximately 38.1% of pre-9/11 veterans are in management and professional occupations, as compared to their non-veteran counterparts who occupy these positions at a rate of 33.4% (DVA, 2018).

Table 3

Occupation of Veterans employed in different sectors expressed in percentages

Type of Occupation	Pre-9/11 veterans %	Nonveterans %
Management, Professional	38.1	33.4
Production, Transportation	18.0	18.0
Sales, Office	14.6	17.1
Service	13.9	15.1
All other	15.5	16.5

Note: Occupation of veterans employed in different sectors shown here was coded with multiple dispersed into categories with most recent period of service. *Source: U.S. Census Bureau, American Community Survey PUMS, 2018 Prepared by the National Center for Veterans Analysis and Statistics*

Job status is an independent variable which is critical in this study; the findings were interpreted using the SPSS data editor to assess the significant difference between the dependent variable (veterans with CHD) and the independent variable of (job status).

Educational Level

Education is the basis of human development among different disciplines and all cultures worldwide; it is a significant source of population advancement for global civilization (Samir & Wolfgang, 2017). It is universally believed that highly educated individuals have minimized death rate than their counterpart less educated individuals (Samir & Wolfgang, 2017). Educational level is essential in this study, and Table 4 below shows the distribution of educational attainment among the United States military veterans. The social determination of educational level is an independent variable that will be used through the SPSS data editor to analyze the significant differences between veterans with CHD as a dependent variable.

Table 4

Educational Level attainment among the U.S. Military Veterans

Educational-Level attained %	Male veterans %	Female veterans %
High school	23.1	14.3
Some college	46.6	44.8
Bachelor's degree	18.8	34.3
Advanced degree	11.4	16.6

Note: Educational level attained among veterans shown here was coded with multiple dispersed into categories with most recent period of service. *Source: U.S. Census Bureau, American Community Survey PUMS, 2018 Prepared by the National Center for Veterans Analysis and Statistics*

Table 4 above shows 23.1% of male veterans acquire a high school educational level, but do not pursue an advanced degree. On the other hand, 16.6% female veterans obtain an advanced degree. This indicates that female veterans were more likely to acquire an advanced degree after active duty than their male veteran counterparts.

Location

Location is an actual place, position, or site engaged for a project or it has been made available for tenancy or marked by distinctive feature. An actual location designated for physical project such as construction of a township or a city for human dwelling and development (Ioannis, Harrison, & Jiangmin, 2020).

Location is an independent variable which is part of the quantitative data from the BRFSS database, and also one of the factors of socioeconomic determinants used in this study. The independent variable (location) was interpreted through the SPSS data editor to analyze the significant differences between veterans with CHD as a dependent variable. The U.S. Census Bureau survey suggested that the United States veteran population is equitably distributed around access to VHA hospitals and housing

communities (Pietrzak et al., 2017). United States military veterans were commonly found around military communities due to the benefits and other services available for them (Tarlov et al., 2017).

Table 5

Local Distribution of Military Veteran population by states

Total	**19,902,577**		
Alabama	369,962	Montana	91,336
Alaska	68,719	Nebraska	130,126
Arizona	507,706	Nevada	218,406
Arkansas	222,286	New Hampshire	105,390
California	1,681,730	New Jersey	355,766
Colorado	403,327	New Mexico	158,994
Connecticut	184,302	New York	776,522
Delaware	71,845	North Carolina	730,357
District of Columbia	27,875	North Dakota	51,677
Florida	1,525,400	Ohio	774,935
Georgia	697,127	Oklahoma	303,205
Hawaii	112,304	Oregon	303,689
Idaho	122,067	Pennsylvania	819,185
Illinois	628,254	Rhode Island	63,250
Indiana	409,836	South Carolina	402,596
Iowa	206,430	South Dakota	65,335
Kansas	194,186	Tennessee	470,390
Kentucky	295,390	Texas	1,584,844
Louisiana	284,074	Utah	134,313
Maine	114,020	Vermont	43,191
Maryland	389,640	Virginia	725,028
Massachusetts	323,253	Washington	560,200
		West Virginia	142,694

Michigan	589,326	Wisconsin	363,898
Minnesota	327,629	Wyoming	47,220
Mississippi	191,411	Puerto Rico	79,322
Missouri	442,579	Guam	10,026

Note: Local distribution of veterans shown here is coded with multiple dispersed into categories with most recent period of service. *Source: U.S. Census Bureau, American Community Survey PUMS, 2018 Prepared by the National Center for Veterans Analysis and Statistics*

Table 5 above shows military veterans' population based on individual states distribution. The state of California has the most significant military veteran population with approximately 1,681,730, which is 11.8% of overall veteran population. The least populated territory is Guam with 10,026 which were about 0.000504% of overall veteran population (DVA, 2018). The location variable is one of the independent variables deduced to determine the significant difference between veterans with CVD dependent variable.

In summary, social determinants of factors such as income level, job status, educational level, and location may act as obstacles for veterans with CHD who have little or no access to care. The dependent and independent variables are quantitative data essential for analysis in this study. The characteristics of the variables must be reliable, valid, and free from biases to meet the standard of data quality to infer the outcome of the hypothesis. This study focuses on quantitative research consistent with understanding why veterans with CHD have no access to care due to factors such as job status, income level, educational level and location which are the key variables in this research.

Historical development of access to care in the United States

The United States is one of the wealthiest nations in the world, and efforts to achieve necessary access to care have been a challenging issue for decades. The overview

of access to care in the United States covers historical phases of the healthcare system, healthcare reforms, and congressional bills supporting access to care for the general population in the country is the priority in this study. The hospital system in the United States dates back to the 1600s. In 1600 to early 1700, many immigrants, such as the Pilgrims, traveled to America in pursuit of more significant financial resources, economic prospect, and exploration of religious freedom (Sing & Douglas, 2012). The establishment of almshouse or poorhouse facilities is referred to as hospitals today. These facilities were established to serve the helpless citizens with food services, accommodation, and health services for the sick. The functions of the poor house or the almshouse facilities over the years accelerated into larger accommodation facilities with nurses, house aides, and physicians who were invited to attend to sick guests. The operation of the first poorhouse started in the Colonies was to facilitate medical services in Boston in 1660. The poor house operations over the years developed into the mainstream medical facilities where both the poor and the sick were served and cared for (Sing & Douglas, 2012).

The first phase of American healthcare delivery system started in the revolutionary era, or the pre-industrial period in the middle of 18th century to the later part of the 19th century. The postindustrial epoch was the second phase which began in the late 19th century. The 19th century made way for the third phase which was the corporate period marked by managed care, health integration, information technology and globalization (Sing & Douglas, 2012). The 19th century approach made a major impact on health technology which is seen in the healthcare system today (Sing & Douglas, 2012).

In 1700, the economic hardship and other poor circumstances in Europe forced many families out of the continent. The financial opportunities in the United States attracted them in for proper living, civil settlement, and economic freedom (Sing & Douglas, 2012). The 1776 independence of the United States of America contributed substantially to the advancement of almshouse services in the country, due to population growth and urbanization. In 1805, the government policies on provision for healthcare facilities paved for the construction of hospitals to sustain the population growth of the country. In 1848, the unsuccessful revolution in England attracted many intellectuals and activists to migrate to the United States to pursue their profession and trade (Sing & Douglas, 2012). The 1900s were a period of scientific advancement towards industrialization and professional jobs such as doctors, dentists, nurses, and the clergy that were highly needed in the country (Sing & Douglas, 2012).

In 1901, after President William McKinley's death, President Theodore Roosevelt came to power. He introduced progressivism with efforts to secure universal health insurance coverage for all Americans (Machikanti et al., 2017). President Roosevelt (1901-1909), led the United States towards progressive reforms, strong international policy, and access to health care as a right for every American (Machikanti et al., 2017). President Theodore Roosevelt's enactment of the universal health care (progressive) plan to initiate easy access to care for every American did not succeed due to lack of support from the Congress (Machikanti et al., 2017). There was strong opposition from the Congress which voted against the enactment of this plan (Machikanti et al., 2017).

In 1933, President Franklin D. Roosevelt endorsed public funded health care program as part of Social Security legislation to support access to health care, but Congress ruled against the proposal (Machikanti et al., 2017). In that same year (1933), President Franklin Roosevelt came up with a plan (The New Deal) to crank up the high federal spending which aligned with defense needs and initiated the provision of health care reform (Sing & Douglas, 2012). The New Deal plan to eliminate excessive spending on defense and to promote universal access to care for all Americans failed during implementation before the death of the President (Sing & Douglas, 2012). In 1939 through 1945, the United States suffered economic hardship, shortages of medical facilities, and medical supplies caused by the World War II. The aftermath of the war pushed Congress to embark on legislative activities to restructure the healthcare industry (Sing & Douglas, 2012). In 1945, several American hospitals were out of operation due to World War II, and almost 50% of the counties in the United States had no hospitals. President Franklin Roosevelt introduced a proposal to create universal care for all Americans, in attempt to fulfill the fundamental right for humanity to access health care (Sing & Douglas, 2012). The President envisioned universal care not only to initiate the basis of fundamental human right, but to encourage access to health care for all classes of social status (Sing & Douglas, 2012).

In 1946, Senator Lister Hill a Democrat (Alabama) and Harold Burton a Republican (Ohio) enacted the Hill-Burton Act, to plan hospital constructions all over the United States to replace those that had been closed during World War II. The Hill-Burton Act was meant to address the shortages of medical facilities that called for the creation of

10,800 healthcare centers, expanding the number of hospital beds to over 150,000 by 1960 (Sing & Douglas, 2012). In 1949, President Truman inherited the universal insurance ideas from his predecessor President Franklin Roosevelt, and seven months into his presidency he proposed a new national health care program to ensure that all communities in the country have access to care (Machikanti et al., 2017). President Harry S. Truman proposal of "universal" national insurance program for all American citizens did not succeed due to lack of congressional support (Machikanti et al., 2017).

Following this unsuccessful attempt, the United States experienced multiple healthcare reform proposals over several years, without any movement toward universal health care (Machikanti et al., 2017). President Lyndon B. Johnson supported the Medicare and Medicaid program which was initiated in 1935 by President Roosevelt. The 1965 Medicare and Medicaid Amendment to the Social Security Act, focused on improving and expanding access to care for all American citizens, especially the elderly and children (Machikanti et al., 2017). President Richard Nixon recommended the promotion of universal health care system with extensive access to care by all citizens, but the proposal was unsuccessful due to congressional disapproval (Machikanti et al., 2017). In 1970, Senator Ted Kennedy, a Democrat from Massachusetts, presented a bipartisan national health insurance bill. The bill had no cost sharing, and it was developed by the Committee for National Health Insurance created by United Auto Workers. The bill was composed of substantial costs which affected the Auto Union budget and failed to reach implementation (Machikanti et al., 2017). In 1976, President Jimmy Carter's proposed health care reform including many of the characteristics of

Senator Ted Kennedy's universal national health insurance bill. In 1980, President Carter's changes to the health care reform with (bipartisan universal national health insurance bill) became unsuccessful due to the budget deficit and economic devastation of the country (Machikanti et al., 2017). In 1993, President Bill Clinton and his wife, Hillary Clinton, proposed health care plan with compulsory enrollment in health insurance and secured affordability across all income levels. This proposal was very complicated and did not have support of the hundreds of key constituencies which were already fighting against the proposal. The proposal ultimately did not gain Congressional support for approval (Machikanti et al., 2017).

The United States healthcare system had faced a series of historical phases that have posed challenges to access to care (Machikanti et al., 2017). The ACA has struggled over the years for proper implementation and successful practices (Miller & Wherry, 2017). Approximately 25 million people in the United States are still without health insurance coverage; the lack of health insurance prohibits easy access to care for all Americans (Bauchner, 2017).

Veterans Health Administration

The process of establishing the Department of Veterans Affairs (DVA) organization dates back to 1663 during the Pilgrims of Plymouth Colony who engaged in war with the Pequot Indians (VHA, 2018). The battle between the Pilgrims of Plymouth Colony and Pequot Indians sustained several casualties' which impacted the standards of living of the soldiers in the country (VHA, 2018). This situation prompted the Pilgrims of Plymouth Colony to pass the law to support the disabled soldiers (VHA, 2018). The

Continental Congress of the United States in 1776 enacted a pension scheme to support the wounded veterans economically; the movement encouraged massive military enlistment in the country (VHA, 2018). The federal government approved the first domiciliary and medical facility for veterans in 1811(VHA, 2018). By the early years of the 19th century, assistance for veterans was extended to include remunerations and annuities for veterans, their widows, and dependents (VHA, 2018). The mission statement of the VHA is to fulfill President Lincoln's promise: "To care for him who shall have borne the battle and for his widow, and his orphan" by serving and honoring the men and women who are America's veterans (VHA, 2018, p. 1). The largest integrated healthcare system in the United States run by the federal government's VHA (VHA, 2018). The VHA operates 1240 healthcare facilities with 170 medical centers and approximately 1061 outpatient facilities providing several modern clinics in the country, with an enrollment of over nine million veterans every year (VHA, 2018).

The VHA is a cohesive healthcare system with multiple state-of-the-art facilities, including continuum medical centers and several clinics all over the country (Borne et al., 2017). The VHA works in collaboration with standard copayments from veterans who have other insurance coverage that ease their access to care (Borne et al., 2017). The VHA facilities offer a variety of advanced medical services and the way to compliance under ideal situations which could not be handled in other facilities outside the VHA healthcare system (Borne et al., 2017). In 2014, the VHA cost per enrollee (a veteran's enrollment in the VHA system) estimated at $6,344.00 per annum (Weeks, 2016). The estimated total annual expenditure for VA healthcare of $57.591 billion may seem

substantial, but it does not include the cost for veterans who use other health insurance coverage outside the VHA health system (Weeks, 2016). The $6,344.00 estimated annual cost does not include veterans who are ineligible for disability claim and therefore ineligible to access the VHA (Weeks, 2016).

DVA tools and strategies underlying disability claim procedures and awards are essential for this research. The Andersen Model of Healthcare conceptual framework is utilized to evaluate the determinants of VBA disability scheme for compensation, and access to VHA healthcare utilization (Fried et al., 2018). The Federal government has invested additional capital resources into the VHA operational budget to provide quality health care services for the United States military veterans (Weeks, 2016).

The VHA provides services in all areas of medicine for eligible veterans and their families. These services include primary health care, specialty health care, mental health, emergency department, inpatient hospitalization, dental hygiene, ambulatory, morgue and other health-related services (Fried et al., 2018). The VHA administration and human resources engaged in the recruitment of qualified physicians, surgeons and other professionals as part of the workforce to deliver quality health services (Mohr et al., 2018). The VHA has a contract with the United States medical institutes to provide physicians to work in the VA hospitals to deliver quality health services to veterans (Mohr et al., 2018).

The DVA is engaged in networking with VHA public health administrators to accomplish the best conceivable results for veterans' well-being. The Centers for Independent Living is part of the scheme conducted by the VA to provide a wide variety

of facilities, sponsoring independent living and well-being for veterans across disabilities (Hale-Gallardo et al., 2017). The need to increase long-term housing services and healthcare is critical as well as cost-effective approaches to provide incentives for veterans' living in the communities around the United States (Hale-Gallardo et al., 2017).

The Veterans Choice Program (VCP) has been introduced to serve as a prior approval to receive care in other non-VHA medical centers, for veterans who have are distant from the VHA facilities (VHA, 2018). Veterans are approved for the VCP on a case by case basis when requirements are met to access the benefit (VHA, 2018). The need for the VCP incentive arises when a veteran needs urgent treatment for a specific kind of care and in times of emergency (VHA, 2018). Veterans or their family members who dwell in the remote communities with no VHA medical centers are eligible to use the VCP incentive. The VCP is operated with providers that have been contracted by the VCP program network of the VA system (VHA, 2018).

To summarize the overview of the VHA mission, vision and culture to exercise the motive and the inspiration laid down by President Abraham Lincoln's promise for veterans (by taking care of servicemen, their spouse, and children). Despite, the series of administrative issues faced by the VHA organization over the years, VHA has adopted system strategies to administer the successful operations of the agency. The VHA's fundamental mission is to concentrate on veterans' well-being and the provision for access to care for all eligible veterans.

Patient Protection Affordable Care Act (ACA)

In 2010, the Patient Protection and Affordable Care Act (ACA) was introduced by President Obama and signed into law, made sweeping and historic innovations to the health care system and the life science organizations of the United States (Machikanti et al., 2017). The ACA implementation increased the right of over 20 million American citizens to insurance coverage with guaranteed access to health care (Machikanti et al., 2017).

The United States spent $3.0 trillion, or $9,523 per person on healthcare in 2014; this is higher than any other Western nation (Salmond & Echevarria, 2017). The ACA's program primary aim is to improve access to the traditional health care system through the expansion of affordable health insurance coverage opportunities. Some incentives extend access to primary and secondary preventive care including immunizations and screening (Sommers et al., 2017). The ACA proposed Medicaid covering people up to 138% of the Federal Poverty Level (FPL) and marketplace coverage for people with incomes above 138% FPL; the individuals with incomes between 138% and 400% were also subsidized (Sen &DeLeire, 2018). There were 29 states including Washington (District of Columbia) that expanded Medicaid through the ACA program (Miller & Wherry, 2017). The Medicaid cost and benefits were considered through Section 1115 waivers program, before the states decided on expansion (Miller & Wherry, 2017). Medicaid expansion involves changes impacting federal financing for expansion populations, the requirement for eligibility, and the process of enrollment and renewal of the coverage (Miller & Wherry, 2017).

In 2012, the Supreme Court made it optional for all the 50 states to decide on adopting the ACA reform related to Medicaid expansion. The 50 states have the choice to implement the program based on individual state preference (Miller & Wherry, 2017). Twenty-four states rejected the Medicaid expansion in 2014, affecting over 6.7 million uninsured citizens in low-income status, who would have had access to the coverage under Medicaid expansion (Miller & Wherry, 2017). In 2017, there were five states out of the 24 states that eventually adopted the Medicaid implementation via the ACA coverage which made the program the most extensive insurance coverage in the history of the country (Miller & Wherry, 2017).

In 2012, the Medicaid program through ACA reform extended the number of uninsured young adults (individuals from 18 to 26 years) from 7.0 million to 16.4 million, under their parents' health insurance coverage (Blumenthal et al., 2015). According to Sommers et al., (2017) any form of insurance coverage is difficult to adopt under any health care system, and it takes careful search to select a better coverage with a reasonable premium. The provision of health care services is essential in any community; it involved issues of selecting insurance coverage, the quote on the type of insurance benefit, and the length of time for the insurance program implementation (Sommers et al., 2017). Political factors deter the implementation of health care reform, because health insurance coverage deals with legislative bureaucracy that affects the provision for health care (Sommers et al., 2017).

Medicaid and Medicare under ACA

The ACA reform has expanded insurance coverage through premium subsidies for private coverage, an individual preference, and Medicaid expansion (Frean et al., 2017). The Medicaid health insurance program was designed for low-income citizens, children, their parents, the elderly and individuals with a disability (Blumenthal et al., 2015). Medicaid pays an estimated 74.5 million Americas' health insurance; the participation of the Medicaid program is optional, but all the 50 states participate in the program (Blumenthal et al., 2015). The ACA was introduced to function along with the Medicare and Medicaid programs to expand of access to care for Americans (Machikanti et al., 2017). The Medicaid eligibility was assessed using the 2012-2015 American Community Survey with a triple-difference appraisal strategy that shows variation by income level, time and geography of all Americans (Frean et al., 2017). The ACA expansion to include Medicaid programs encouraged Americans to gain eligibility of coverage among previously-eligible citizens and non-expansion states (Frean et al., 2017).

Access to care

The meaning and definition of access to care (ATC) are vital in this study. The Office of Disease Prevention and Health Promotion define access to health services "the timely use of personal health services to achieve the best health outcomes" (Office of Disease Prevention and Health Promotion, 2017, p. 2). ATC is critical and involves "the act of gaining access to health care system through (insurance coverage, cash), accessing a location of provision for health services (geographic availability) and healthcare provider whom patients trust and able to communicate with (person)" (Office of Disease

Prevention and Health Promotion, (2017, p. 2). ATC is critical for the well-being of individuals, families, and the nation in general to have health care services (Sing & Douglas, 2012). In the United States healthcare delivery system, the right to receive care normally involves some form of insurance coverage payable by insurance companies (the payer; Sing & Douglas, 2012). Multiple players (mega-insurance corporations, integrated healthcare organizations, and the federal health agencies) control the U.S. health care system by encouraging payers to determine the right coverage for individual coverage or organizational coverage to access care (Sing & Douglas, 2012).

The ACA reform was intended to attain nearly universal health insurance coverage for the American people through a mixture of insurance market reforms, directives, subsidies, health insurance exchanges, and Medicaid expansions which occurred in 2014 (Courtemanche et al., 2016). According to Courtemanche et al., (2016), the ACA expanded private insurance in both employer-provided and non-group coverage with the aim of massive access to care. The citizens who gained insurance coverage from the ACA program were individuals without a college degree, non-whites, young adults, unmarried individuals and people without children in the home (Courtemanche et al., 2016).

Measures of access to care

Kruk et al. (2017) suggest that measures of access to care are essential in the healthcare industry, and involve the provision of information on patients (patients' health records), medical history, records of medication and other health information. The availability of information on patients' records paved the opportunity to measure access

to care. Healthcare systems are comprised of health insurance, the standard source of health care, mental health, out-patients clinic, emergency department (ED) and other units that provide care. The process of measuring access to care relates to structural barriers affecting the operations of the health services. These barriers included transportation, extended waiting periods (appointment scheduling), and the physicians' ability to attend to patients' needs.

Other factors included in measuring access to health services are the patient and physician relationship, communication between patients and providers (without any language barriers), appropriate cultural competency, ability to pay and ethical values. The United States healthcare delivery system was designed to encourage measures of access to care through contact with providers, payers, and all other components of the healthcare system. Measuring access to care is essential to determine whether individuals have effective quality care, and the ability to obtain access to care with convenience and a positive outcome from their treatment (Kruk et al., 2017).

Standard of care in the United States healthcare system

A standard of care is the adoptive medical practices followed by all physicians in the United States with a common goal of providing and improving quality care for patients (Benjamin et al., 2017). The standard of care is evaluated based on the performance of physicians' ability to treat patients' ailment and ability to create an interpersonal relationship through professional practice (Nishimura et al., 2017). The American Council of Clinicians (ACC) and other affiliated organizations are responsible for overseeing standard of care practices have been adopted by healthcare providers

(Benjamin et al., 2017). Regulatory bodies such as American College of Cardiology (ACC)/ AHA Task Force, Institute of Medicine, and other preventive organizations have designed guidelines to ensure the standards are observed throughout the healthcare system (Nishimura et al., 2017). These guidelines safeguard the safety and comfort of patients and families and the standard practices of health care (Nishimura et al., 2017). The ACC/AHA guidelines on the standard of care provide for patients' and families' the right to select the best medical provider for quality care delivery (Nishimura et al., 2017). Physicians must comply with the standard of care procedure for providing quality care to minimize medical malpractices (Nishimura et al., 2017). The recommendations designed by American College of Cardiology (ACC)/AHA Task Force, Institute of Medicine, and other preventive organizations are observed by providers to ensure that standard values for quality care are observed (Nishimura et al., 2017).

Physicians' practices are measured by the standard of care to minimize malpractice, to promote professional awareness and to encourage proper ethics around the health care environment (Benjamin et al., 2017). Physicians' are equipped with tools such as workshops, training, manuals, and policies needed to develop a standard of care performance and to ensure guidelines are followed to deliver excellent care (Benjamin et al., 2017). The guidelines for the standard of care are well-established to safeguard medical practices in the medical profession (Dickman et al., 2017). Physicians' effective practices improve health care and safeguard long life expectancy, especially for the wealthiest Americans who have the resources to cover expensive insurance coverage (Dickman et al., 2017). The American wealthiest citizens can afford expensive health

care and enjoy the proper standard of care with long life expectancy, exceeding that of the poorest American counterpart by 10-15 years (Dickman et al., 2017).

The National Coordinating Council for Medication Error Reporting and Prevention (NCC MERP) is an organization which serves a similar purpose such as ACC, AHA, and IOM to oversee standard of care practices to minimize medication error, human error, and drug abuse (Nishimura et al., 2017). The NCC MERP instituted measures such as routine inspections, performance assessments, and questionnaires to prevent mishaps to patients in the process of receiving care (Nishimura et al., 2017). The Institute of Medicine (IOM) Committee re-enforces the standard of care guidelines and policies reducing about 3% hospitalization of adverse events which occurred in medical facilities in the country (Nishimura et al., 2017). Moreover, the IOM survey revealed between 50,000 and 100,000 patients die yearly, due to medical errors and standard of care malpractices (Nishimura et al., 2017). The ACC/AHA guidelines prevented over 50% of the adverse events such as medical errors, patient mishandling, surgical errors, and system errors (Nishimura et al., 2017).

Health inequalities of United States healthcare system

The United States citizens face health inequalities (the differences in health status between diverse population groups) among the different groups or racial/ethnic populations (Dickman et al., 2017). The problems of racial discrimination play a leading role in the process of obtaining access to care in the United States healthcare system (Dickman et al., 2017). The United States healthcare system is exposed to health inequalities among the diverse population, which favor the rich and deny the poor

(Dickman et al., 2017). The health inequalities do not decrease income-based differences, and usually worsen the situation for the poor citizens to gain access to care (Dickman et al., 2017). The ACA expansion encouraged programs that cover health inequalities accelerating access to care for every individual (Dickman et al., 2017).

The variations in social class and economic standards impede access to care for low-income individuals in America (Dickman et al., 2017). The barriers to health care reform include the fragmentation of providers, high cost of implementation, and unexpected outcomes impacted access to care (Salmond & Echevarria, 2017). Despite the expansion of the ACA insurance coverage, poor Americans are less apt to access care as compared to their wealthy counterparts (Dickman et al., 2017). The fact is that most poor Americans choose to stay uninsured and they have no intention of obtaining insurance coverage to access care (Dickman et al., 2017). Private insurance coverage premiums increase over time, which generates excessive cost-sharing among insurers and payers. This issue deteriorated salary gains of poor Americans and forced 15% of low-income households (the combined net income of people living together in a house) into debt (Dickman et al., 2017). This situation led low-income households to declare bankruptcy, creating another obstacle to access care (Dickman et al., 2017).

ACA and access to care of military veterans through non-VHA healthcare system

The ACA reform resulted in dramatic changes in the access to care by veterans who previously lacked access to both VA eligibility and non-VA health coverage (Dwosky et al., 2018). The United States health care system composed of (for profit-making and nonprofit) organizations financed by multiple players unlike that of the

military hospitals (Blattner et al., 2018). The American Community Survey (ACS) of 2018 stated an estimated 19,602,316 military veterans are using VHA health system (DVA, 2018). In 2015, the rate of un-insured veterans dropped by an estimated 36% to about 12% after the enactment of the ACA (Dwosky et al., 2018). The ACA program extended insurance coverage to over 20 million Americans, including military veterans increasing, access to care (Dwosky et al., 2018).

Military Veterans

The United States Department of Defense (DOD) and the Department of VA define a veteran as an individual discharged from the active military, naval services, air services under the status of honorable discharge, meaning veterans with proper conduct during active military service (DVA, 2018). In 2015, approximately 18.8 million of the United States citizens were recognized as military veterans (Odani et al., 2018). The American Community Survey (ACS) tool provides annual information on the social and economic features of the United States population. In 2018, the ACS revealed that the veteran population in the U.S. consisted of an estimated 19,602,316 individuals. This cohort of U.S. military veterans was composed of 1,279,445 officers and 18, 322,871 enlisted personnel (DVA, 2018). The United States Armed Forces' documentation of discharge (DD Form 214) reveals individual's conduct of service (honorable discharge, general discharge, and a dishonorable discharge) at the time of separation from the service (Odani et al., 2018). The honorable discharge indicated the service member served honorably without a bad conduct, the general discharge is individual's conduct is satisfaction but the member failed to meet all expectations of conduct and dishonorable

discharge is a situation where individual has committed serious crime or serious misconduct (Odani et al., 2018). Veterans need respect and dignity for defending the country's borders, the U.S. allies and the rest of the world (Weeks, 2016).

Disabled Veterans

A disabled veteran is a service-connected individual who suffered conditions caused or aggravated by military service (Fried et al., 2018). In the fiscal year 2013, the DVA spent $54 billion on disability compensation benefits for service-connected veterans with conditions; the expenditure was a substantial portion of the United States' budget (Fried et al., 2018). The VA uses the Andersen Model of Healthcare conceptual framework to evaluate the determinants of Veterans Benefits Administration (VBA) disability scheme for compensation and access to VHA healthcare utilization (Fried et al., 2018). The service member must have a service-connected condition upon separation from active duty under honorable conditions to be eligible for benefit (DVA, 2018). The disability award composed of monthly tax-free monetary compensation and other essential welfare benefits (DVA, 2018). Veterans with post-service disabilities or secondary disabilities occurring in service, or supposed situations related to active military service, or circumstances which became aggravated after active service, are eligible for disability compensation (DVA, 2018).

Dependency and Indemnity Compensation (DIC) is a portfolio designed to supplement the welfare of the families of veterans who died during active duty (DVA, 2018). The DIC eligibility is designed for the deceased veterans' surviving spouse, child or parents including ready access to care with the VHA health system (DVA, 2018).

Disabled veterans are also eligible for other benefits such as adaptive housing grants, Service-Disabled Veterans' Insurance and Veterans' Mortgage Life Insurance (DVA, 2018).

The disability rating is expressed in percentages for the award of access to care and monthly compensation to the service-connected veteran (Fried et al., 2018). To analyze service-connected disability, the percentage of rating relates to severity by scale from 0% (least disabling) to 100% (most disabling) in increments of 10% (Fried et al., 2018). Veterans with no rating from their claim or who had a claim denied are ineligible to access the VHA care system and do not receive monthly compensation for maintenance (Fried et al., 2018). Individuals with 10% disability ratings through 30% disability ratings are eligible to access care for their service-connected conditions in the VHA. Veterans with rating 10% through 30% ratings are responsible for paying prescription drugs of any other minor conditions they may be treated outside their service-connected conditions (Fried et al., 2018).

The significant challenges facing the VA are the growing number of veterans from previous conflicts era, especially (the Post 9/11) and (the Operation Iraqi Freedom) have been exposed to physiological, cognitive and psychological decays of future life (Hale-Gallardo et al., 2017). These veterans from previous conflicts period are projected to increase in the number of disabled-veterans, posing the economic burden on VA's budget (Hale-Gallardo et al., 2017). Disabled veterans' medical needs of vocational and social integration in the form of interdisciplinary organization of care, facilities, and support are essential for long-term follow-up (Hale-Gallardo et al., 2017). Veterans with

post-traumatic stress disorder (PTSD) and key physical disability need continued physical and mental therapies after rehabilitation and easy access to health care services (Hale-Gallardo et al., 2017).

United States Military Veterans and CHD

CHD is the leading cause of death worldwide and about 8.45 million military veterans are affected by the conditions which make it a priority in this research study (Krishnamurthi et al., 2018). The 2016 data of Centers for Disease Control (CDC) extracted from Behavioral Risk Factor Surveillance Survey (BRFSS) was used to assess a cohort study of the United States military veterans with CHD (Srivastava et al., 2017). In 2017, reports from VHA estimated 8.45 million military veterans were admitted to VA hospitals for various CHD conditions (Krishnamurthi et al., 2018). The VHA cost for disabled-veterans in 2017 estimated at $57.591 billion (Weeks, 2016). The cohort study of U.S. military participants from four U.S. regions: Northeast, Midwest, South, and West revealed 13,835 military veterans with CHD (Srivastava et al., 2017). The distribution of CHD conditions among13, 835 military veterans in the country were as follows: 18.3% from Northeast, 23.5%, 37.1%, and 21.0% were from the Midwest, South, and West respectively (Srivastava et al., 2017). The cohort study about the United States military veterans with CHD indicated the West region was independently connected to lower rates for medical checkups within a year (Srivastava et al., 2017). The treatment and management of the CHD among the United States military veterans is a crucial issue for the VHA facilities all over America (Srivastava et al., 2017).

Eligibility for military veterans' access to care in the VHA healthcare system

The VHA is the largest integrated health care system in the United States. The VHA (VA hospitals) delivers a variety of medical services to veterans and their families who are enrolled in the VA health care system (O'Hanlon et al., 2017). The provision of quality health care is one of the leading national commitments to the United States veterans (O'Hanlon et al., 2017). In 2014, to ensure the continued provision of quality care delivery for veterans, the VA introduced the Veterans Access, Choice, and Accountability Act (VACAA); (O'Hanlon et al., 2017). The purpose of VACAA is to enhance performance evaluation, quality management, compliance, and risk management that are critical to the vision of the organization (O'Hanlon et al., 2017). The VACAA directed an independent evaluation of VA health system capabilities and materials required to administer VHA operations and administrative practices to improve access to care (O'Hanlon et al., 2017). The independent evaluation of the VA health system directed by VACAA uncovered mismanagement of resources, complaints from veterans, long awaiting disability claims and other administrative malpractices (O'Hanlon et al., 2017). The extent of responsibilities of VACAA evaluations is to improve the VA health system capabilities and materials to expedite the process of awarding disability ratings to expand veterans' access to care (O'Hanlon et al., 2017).

VA service-connected eligibility is to establish a condition from the veteran medical records and it must prove a nexus (contributing factor) that occurred during active service or a situation was aggravated in active service (Fried et al., 2018). The process of establishing service-connected disability can be complicated, and the absence of supporting evidence can render a denied claim to the veteran (Fried et al., 2018). The

Congress and VA have introduced dependable instrument (claim assessment calculator) to calculate service-connected claim for a particular group of veterans with specific situations (Fried et al., 2018). The dependable instrument eliminates complications related to long logs of documentation, excessive workload, and complaints from veterans and to promote eligibility readily to access care (Fried et al., 2018). Table 6 below indicates the overview of veterans' disability ratings and other benefits.

Table 6

Disabled veterans with VA eligibility rating

Disability rating by percentage	Disability rating VHA access	Disability rating for other veterans services
0% - 30%	Limited to other health services other than the service-connected conditions, pay medication for other minor conditions. Ineligible for dental services. Eligible for transportation to VA hospital reimbursement	Access to vocational rehab, housing loan eligibility, homeless benefits, eligibility for federal employment
50-90%	No limitation to any form of health care services. Ineligible for dental services. Transportation to VA hospital reimbursement	Vocational rehab, housing loan, homeless benefits, free vehicle decals, federal employment, state drivers' licensing, social recreational license, fishing license, pass for public transportation, (eligibility varies based on state by state regulations)

100%	No limitation to any form of health care services including dental services. Transportation to VA hospital reimbursement	Vocational rehab, housing loan, homeless benefits, free vehicle decals, federal employment, state drivers' licensing, social recreational license, fishing license, pass for public transportation, tax free home property (eligibility varies based on state by state regulations)

Note: Disability rating chart from 0% to 100% with dependents info. You will not receive a higher rate even if you have a dependent spouse, child, or parent. *Source*: *https://www.va.gov/disability/compensation-rates/veteran-rates/*

According to Fried et al. (2018), veterans with 100% service-connected rating have access to VHA medical care, unlimited access to dental services and other supportive services. The disability rating of 10% to 30% permits equal access to care from the VHA facilities, except that these individuals must pay for prescription drugs outside their service-connected conditions. The VHA system treats veterans with 0% through 30% rating for emergencies and other minor conditions other than their service-connected conditions when a slot is available for them. Disabled-veterans with 0% through 90% rating are excluded from the dental program. These individuals are eligible for other essential services such as vocational rehabilitation, housing loan, homeless housing and federal employment. ATC has been a challenging issue facing some veterans (with low percentage rating) such factors are financial barriers, prescription drug cost, delays in acquiring medical care, and proximity to VHA facilities have posed obstacles to care (Srivastava et al., 2017).

In summary, access to health care services is an essential component for the prosperity of every nation. The United States military veterans dedicated their lives to

serve the freedom of this great nation; it is important to support their health needs through access to care. The VHA system is the sole organization responsible for veterans' medical needs, and the organization has adopted several strategies to expand and expedite veterans' access to care. The motto of VHA Integrity, Commitment, Advocacy, Respect, and Excellence (ICARE) signifies the exemplary patronage of the organization's principles to serve the health needs of all United States military veterans.

Demography of Military Veterans in the United States

The information on demography is vital in this study in addressing the issues of access to care among the veteran population in the country. The ACC/AHA guidelines established cardiovascular risk factors are commonly predictable by the age of the individual affected by the condition (Weng et al., 2017).

Table 7 below summarizes data reflecting the ages of the veteran population. Table 7 indicates age distribution among veterans; the post-9/11 post-9/11 veterans comprised of 74% ages (18-45 years) as compared to all other veterans of 81% with ages (55 years and above). The Post 9/11veterans were service members who fought the recent conflicts of Operation Iraqi-Freedom, the Somalia crisis, and the Afghanistan war (DVA, 2018). The recent conflicts exposed many of the post-9/11 post-9/11 veterans to post trauma stress disorder (PTSD) syndrome, which may have eventually caused their separation from active duty. This category makes up 74% of veterans population. All other veterans aged 55 years and above account for 81percent of the all other veteran population and the 19% accounts for all other veterans' ages between 46-54years (DVA, 2018).

Table 7

Age distribution of post-9/11 veterans and all other veterans age distribution

Veteran category	Age	Percentage of total post-9/11 veterans/All other veterans %
Post-9/11 veterans	18-45 years	74
All other veterans	55 years and above	81

Note: Post-9/11 age distributions of all veterans are shown here and coded with multiple dispersed into categories with most recent period of service. *Source: U.S. Census Bureau, American Community Survey PUMS, 2018 Prepared by the National Center for Veterans Analysis and Statistics*

Gender is defined as the genetic identity of human beings as a male or a female, and it is the primary focus which expand the planning of more robust tactic for all groups of human (Sallam et al., 2018). Gender is essential factor in veteran demography; it shows the number of male and female distribution in the veterans' community (DVA, 2018). Table 8 below indicating gender groupings with their respective ages expressed in percentages.

Table 8

Gender distribution among veterans by age

	Gender	
Age groupings	Male %	Female %
17-24 years	6.7	8.7
25-34 years	40.0	43.3
35-44 years	25.7	26.6
45-54 years	18.8	14.9
55 years +	8.8	6.5

Note: Gender distribution among veterans by age shown here are coded with multiple dispersed into categories with most recent period of service. *Source: U.S. Census Bureau, American Community Survey PUMS, 2018 Prepared by the National Center for Veterans Analysis and Statistics*

Table 8 above reflects veteran population by gender. Female veterans' ages 25-34 constituted 43% of the highest gender population. The male counterpart of the same age 25-34 was estimated 40%. The cause of higher gender percentage of age 25-34 was due to separation from active duty after the Operation Iraqi-Freedom, the Somalia crisis, and the Afghanistan war. The female veterans age 55 years and above encompass the lowest percentage of 6.5% of the overall veterans' gender population.

AHA provides information on people and their ethnicity for different purposes (Benjamin et al., 2017). Table 9 below reviews information on racial diversity and gender expressed among the overall veteran population (DVA, 2018). White non-Hispanic males constituted the largest percentage in the population, followed by White non-Hispanic females (DVA, 2018). The Hispanic male and female constituted the smallest percentage of the veteran community with 5.7% and 6.4% respectively (DVA, 2018).

Table 9

Race/Ethnicity among the veteran population

Race/Ethnicity	Male	Percentage (%) of Male veterans	Race/Ethnicity	Female	Percentage (%) of female veterans
White, non-Hispanic	Male	81	White, non-Hispanic	Female	71.4
Non-White, non-Hispanic	Male	13	Non-White, non-Hispanic	Female	22.2
Hispanic	Male	5.7	Hispanic	Female	6.4

Note: Race/Ethnicity among veteran population shown here was coded with multiple dispersed into categories with most recent period of service. *Source: U.S. Census Bureau, American Community Survey PUMS, 2018 Prepared by the National Center for Veterans Analysis and Statistics*

Employment status is significant in understanding veteran demography. Table 10 below reflects on the post-9/11 veterans (male and female) and all veterans (male and female) relating to their occupation types (DVA, 2018). The post-9/11 female veterans occupy 49.9% management or professional positions; follow by all female veterans of 49.7% in similar occupation (DVA, 2018). Table 10 conveys that female veterans occupy management and professional positions in higher percentage as compared to their male counterpart (DVA, 2018).

Table 10
Employment status of veterans

Type of Occupation	Pre-9/11 male-veterans %	Pre-9/11 female-veterans %	All veterans-male %	All veterans-female %
Management, Professional	36.9	49.9	34.3	49.7
All other-occupation	15.5	16.6	16.6	14.1

Note: Pre-9/11 male and female and all veterans' female and male shown here are coded with multiple dispersed into categories with most recent period of service. *Source: U.S. Census Bureau, American Community Survey PUMS, 2018 Prepared by the National Center for Veterans Analysis and Statistics*

Education is essential in acquiring knowledge and training to staff every professional discipline that contributes to the socioeconomic development of a nation. Table 11 below reflects on veteran education attained by gender (DVA, 2018). There is an indication that female veterans comprised of the most significant portion of advanced degree holders with 16.6 percent, but have the least high school attainment of 14.3% (DVA, 2018). Female veterans occupy high positions in several organizations in the country because of the training they acquired from the military, and their ability to advance in their educational prospects (DVA, 2018).

Table 11

Educational attainment among veterans.

Educational level attained	Male %	Female %
High school	23.1	14.3
Some college	46.6	44.8
Bachelor's degree	18.8	34.3
Advanced degree	11.4	16.6

Note: Educational attainment among veterans shown here is coded with multiple dispersed into categories with most recent period of service. *Source: U.S. Census Bureau, American Community Survey PUMS, 2018 Prepared by the National Center for Veterans Analysis and Statistics*

Factors impacting veteran Access

ATC is a foundational concept underlying this study, and veterans' health insurance coverage is a primary indicator of eligibility to access care. Table 12 below shows the overview of health insurance distribution among the United States military veterans and nonveterans. Health insurance coverage of nonveterans male ages 25-34 years is highest with a rate of 19.9% followed by post 9/11 male veterans with a rate of 8.0% (DVA, 2018).

Table 12

Health insurance coverage among post-9/11 veterans and nonveterans

Age-distribution	post-9/11 male-veterans %	Nonveterans male %	post-9/11 female-veterans %	Nonveterans female %
25-34 years	8.0	19.9	6.2	13.0
35-44 years	4.7	17.3	3.8	12.1

Note: Insurance coverage among post-9/11 veterans shown here are coded with multiple dispersed into categories with most recent period of service. *Source: U.S. Census Bureau, American Community Survey PUMS, 2018 Prepared by the National Center for Veterans Analysis and Statistics.*

The ACS survey recorded 8.0 and 6.2 percentage of insurance coverage for the Post 9/11male and female veterans respectively who are between the ages of 25-34 years. The post-9/11 male veterans with 4.7% and their counterpart female veterans with 3.8% ages 35-44 years recorded the lowest percentage of coverage. The ACS data suggests that the post-9/11 veterans are struggling to obtain health insurance coverage (DVA, 2018).

The poverty level assesses the standard of living among individuals dwelling in a community and their lifestyle towards economic well-being (Tarlov et al., 2017). The standard of living among some United States military veteran population is critical in this study. Social determinants risk factors such as job status, educational level, income level, and location are important to this research. An estimated 7.6% of post-9/11 United States military veteran population and 6.8% of all veterans are found living in the poverty zone (DVA, 2018). Table 13 below has categorized poverty scale ranging from 100-149% (best range) through 400% or more being the (worse range) or below the poverty line (DVA, 2018). Table 13 also indicates a higher percentage of post-9/11 veterans' exist in the highest poverty range as compared to their non-veteran counterparts (DVA, 2018).

Table 13

Poverty level distribution among post-9/11 veterans and nonveterans

Poverty level distribution in percentage	post-9/11 veterans	nonveterans
100-149%	5.7%	7.8%
150-199%	7.7%	8.5%
200-299%	18.0%	16.9%
300-399%	16.4%	13.8%
400% or more	44.9%	40.6%

Note: Poverty level distribution among post-9/11veterans shown here is coded with multiple dispersed into categories with most recent period of service. *Source: U.S.*

Census Bureau, American Community Survey PUMS, 2018 Prepared by the National Center for Veterans Analysis and Statistics

Approximately 21 million United States military veterans who live in the rural areas of the country have been diagnosed with CHD conditions (Tarlov et al., 2017). The state of poverty encourages low self-esteem among some veteran population that resulted in morbidity of diseases, especially CHD risk factors with subsequent mortality (Tarlov et al., 2017).

Causes of CHD among United States veterans

In 2017, a survey conducted by the AHA estimated 92.1 million individuals had been affected with one type of CHD (Benjamin et al., 2017). The roots of cardiovascular disease among military veterans are related to a high volume of tobacco product use, and other conditions such as depression, hypertension, coronary artery disease, obesity, and lack of physical activity (Odani et al., 2018). The United States military veterans with CHD represent an estimated 8.45 million, which is expressed as 42.9% of the overall American veteran population (Krishnamurthi et al., 2018). In 2017, AHA data indicated about 8.45 million of the United States military veterans with CHD had some form of hospital admission (Krishnamurthi et al., 2018). Veterans with CHD have a high risk of acquiring other chronic diseases as compared to their nonveterans' counterparts (Fryar et al., 2016). The United States veterans affected by CHD diseases are exposed to low income which is coupled with poor standard of living and sometimes premature death (Flora et al., 2018). Veterans with CHD conditions have challenges in obtaining access to care, and it is essential for them to receive continued care for their circumstances (Weeks, 2016).

Cardiovascular Diseases/ Coronary Heart Disease (CHD)

The AHA defines cardiovascular diseases (CVD) or CHD as the deterioration of the heart and blood vessel disease. These conditions are usually referred to as heart disease (Benjamin et al., 2017). The effect of the CHD includes many risk factors associated with a process known as atherosclerosis (Benjamin et al., 2017). Atherosclerosis develops when a substance called plaque is formed in the walls of the arteries; the build-up of the plaque makes it difficult for blood flow causing a blood clot that eventually triggers to a heart attack or stroke (Benjamin et al., 2017). CHD occurrences include hypertension, arrhythmia, cardio disease, stroke, heart valve problems, peripheral artery disease, and conditions of the veins (Benjamin et al., 2017). CHD estimated mortality was approximately 54 million total deaths in 2013, as reported by the AHA (AHA) (Benjamin et al., 2017). Approximately $315 billion is spent annually to prevent chronic diseases, tobacco-related ailment, alcohol misuse, and other cardiovascular risk factors responsible for high mortality rate among the American population (Taksler et al., 2018).

Causes of cardiovascular diseases

A cardiac event can happen abruptly with no signs of symptoms and no prior history of the condition (Chauvet-Gelinier et al., 2016). The heart attack can initiate differently with etiological contrivances caused by psychological, biological and genetic influences (Chauvet-Gelinier et al., 2016). CHD risk factors such as poor diet, stress, lack of physical activities, hypertension and stroke revealed evidence of psychological factors. These factors reflected on substantial presence of somatic syndromes, socioeconomic

constraints, and personal behaviors which triggers the risk of the condition (Chauvet-Gelinier et al., 2016). Demographic factors such as gender, age, and ethnicity are indicators of non-communicable chronic diseases relevant to CHD risk factors (Sallam et al., 2018).

CHD can endanger the patients' condition based on medical inequalities and the effects of natural trails (genetic traces) (Chauvet-Gelinier et al., 2016). Multiple Randomized Control Trials (RCT) instrument are used for CHD diagnosis. RCT are used to identify the primary causes of CHD conditions among individuals during diagnosis, including veterans (Siscovick et al., 2017). The RCT procedures evaluate the risk factors associated with other related chronic diseases such as heart attack, hypertension, stroke and peripheral artery diseases (Siscovick et al., 2017).

The scientific literature on cardiovascular diseases reveals numerous risk factors responsible for cardiovascular-related death. These risk factors include genetics, diabetes mellitus type 2 (T2DM), obesity, hypertension, excessive fat and lipoproteins (Osei & Gaillard, 2017). The collection of cardiovascular risk factors is known as metabolic syndrome (MetS) (cluster of conditions such as high cholesterol, and excess body fat); the situation is different among racial and ethnic groups due to heredity and lifestyle of the ethnicity (Osei & Gaillard, 2017). Cardiovascular diseases are the principal cause of death in the advanced world, and the conditions have become a leading risk factor threatening developing countries (Osei & Gaillard, 2017). Individuals with heavy a smoking habit and people with excessive body mass index, poor physical activities (PA) and high systolic blood pressure (BP) are at risk of CHD conditions (Benjamin et al.,

2017). Other risk factors such as high cholesterol, imbalanced nutrition, and high glucose level are related to a higher lifetime risk of heart failure (HF) (Benjamin et al., 2017).

Gender

CHD risk factors have relevance to gender differences. A good example is heart failure leading to sudden death which occurs among males more than females (Benjamin et al., 2017). The AHA guidelines identified tools to support every individual in staying healthy regardless of gender difference with the aim of minimizing CHD risk factors (Benjamin et al., 2017). Premenopausal safeguards against CHD risk factors with procedures that help to minimize other related conditions for women (Sallam et al., 2018). CHD risk factors which are detected in high lipids (fat clot substance found in the blood) or high cholesterol depend on gender (Li et al., 2017).

Age

The ACC/AHA suggests that age plays a role among the top risk factors for CHD (Weng et al., 2017). Weng et al. (2017) conducted a cohort study involving patients between the ages of 30 to 84 at baseline who were registered with a family physician. The participants in the study underwent evaluation for the eight core baseline variables (gender, age, smoking status, systolic blood pressure, blood pressure treatment, total cholesterol, HDL cholesterol, and diabetes) applied in the ACC/AHA 10-year risk forecast model. The ACC/AHA algorithm standard identified age as one of the risk factors for CHD (Weng et al., 2017). A 2014 AHA survey estimated 220.8 per 100,000 people with CHD were attributed to age-standardization, which influenced the high mortality from this disease in the United States (Benjamin et al., 2017).

Race/Ethnicity

CHD risk factors identify ethnicity as a principal attribute of heart disease, especially for Caucasian males recording an average incidence of 38% and African American males of 48% (Howard et al., 2017). According to Osei and Gaillard (2017), evidence is based on the old-fashioned metabolic limitations which have high CHD risk factor commonly among African Americans as compared to their counterpart Caucasians. The prevalence of CHD risk factors is considered high among African American males, and it is an indication of CHD high risk among African Americans (Howard et al., 2017).

CHD risk factors are prevalence among the African Americans due to diabetes mellitus type 2 and development of heart diseases (Howard et al., 2017). The contributing factors supporting the dominance of CHD among the African Americans, is the fact that the African Americans are vulnerable to non-traditional effects of the CHD risk factors (Osei & Gaillard, 2017).

Socioeconomic Status

Poor socioeconomic standards show a prevalence of CHD risk factors for morbidity and premature mortality worldwide (Stringhini et al., 2017). The Global Burden of Disease (GBD) is an organization that utilizes tools to assess healthcare standards among socioeconomic factors to develop quality healthcare delivery systems (Stringhini et al., 2017). The GBD is responsible for controlling socioeconomic involvement in CHD risk factors from spreading and to ensure health issues are handled equitably in any community (Stringhini et al., 2017). The GBD annual contributions on

socioeconomic development proposed measures to combat non-communicable diseases including guidelines to minimize CHD risk factors worldwide (Stringhini et al., 2017).

Accessibility of Cardiovascular Disease Health Care

Access to care for CHD treatment and minimization is critical, due to the risk factors requiring specialty care (Lamendola et al., 2018). In the United States, CHD risk factors are prevalent among the general population and this disease has been the number one killer of men and women (Riegel et al., 2017). The insurers' (payers of health insurance) trend for prior approval of specialty care has become a measure to regulate access to care (Lamendola et al., 2018). The cost involved in specialty care for CHD treatment, such as (artery bypass surgery) is an evidenced-based obstacle to care (Lamendola et al., 2018).

Preventive measures for minimizing CHD risk factors

The United States Preventive Services Task Force (USPSTF) is an independent, volunteer group of national experts in disease medicine. The USPSTF engages in health improvement by conducting research and the dissemination of the outcomes for screening tests, counseling services, and preventive medicine for Americans (Kurth et al., 2017). The USPSTF incentives are designed as precautionary measures to promote health literacy, reinforce population health and to ensure guaranteed access to care (Kurth et al., 2017). USPSTF engages in strategies on disease management, especially on coronary artery calcium scores, which serve as an indicator to control any future CHD risk factors (Jellinger et al., 2017).

The AHA guidelines on cardiovascular health promotion contain measures to intervene in poor health practices, and to improve population health (Benjamin et al., 2017). The cardiovascular health promotion theme encourages healthy habits and healthy self-management practices of individuals with CHD (Benjamin et al., 2017). ACA implementation is to improve counseling and diagnosing of underprivileged communities which is essential for CHD prevention and healthcare accessibility (Pool et al., 2017). ACA reform focused on CHD preventive care programs to promote education for the masses on insurance benefits and CHD risk factors awareness (Pool et al., 2017). The USPSTF guidelines convey the awareness that cardiovascular screening should be mandatory for everyone (Pool et al., 2017). In the absence of clinical care, CHD patients' health can be improved when the proper precautions are followed to reduce risks (Benjamin et al., 2017).

How Researchers in the Discipline have approached similar Studies

Other researchers' have used the doctrine of this study with similar variables in their research. According to Krishnamurthi et al. (2018), CHD is the leading cause of death globally. The authors suggest that 8.45 million United States military veterans are affected by the disease. The study was first conducted nationwide to review the pattern of veterans with CHD hospitalization in VA facilities (Krishnamurthi et al., 2018). The covariate variable (CHD status), the dependent variable (veteran status) and independent variable (location) are associated with similar variables such as (veterans, CHD and location) which Krishnamurthi et al. (2018) used in their study. The differences in social and economic standards and determinants of income level are barriers to access of care

(Dickman et al., 2017). Social determinants of income level, job status, educational level, and location deteriorate access to care among the United States military veteran population (Gabrielian, 2014).

Independent variables in the research include income level determinants such as job status, educational level, and location. There is evidence that veterans have a high rate of high school graduation, low rates of college graduation, and make more than the median income (Tarlov et al., 2017). Tarlov et al. (2017) study on socioeconomic disparities among veterans revealed that veterans settled close to military installations due to the availability of access to care, food, and other services. According to Fried et al. (2017), socioeconomic factors of low income and job status prevent some veterans from obtaining access to care. The cohort study on U.S. Department of Housing and Urban Development (HUD)-VA Supporting Housing (VASH) program-the VA's housing initiatives are incentives to minimize veteran homelessness, accelerate access to care, and improve living conditions among veterans (Gabrielian, 2014). The Andersen Health Services Utilization Model is a conceptual framework used by the VA to evaluate veterans' eligibility to access care (Fried et al., 2017).

Synthesized studies related to key variables

Several previous studies have relevance to this research. This includes scholarly peer reviewed articles that used similar dependent, covariate, and independent variables. The dependent variable (veteran status) with its covariate variable (ever diagnosed with CHD diseases) and independent variables which are job status, educational level and location (are you a resident of state) were viable for statistical inference through the SPSS

data editor. Srivastava et al. (2017) suggested factors of social determinant such as financial constraints (income level) and the high cost of prescription drugs (expensive drugs) posed obstacles to access care. The CHD risk factors associated with morbidity and premature mortality worldwide are factors of social determinants of income level, employment level, education, and location (Stringhini et al., 2017). The research variables used by Stringhini et al. (2017) indicated social determinants (income level, employment level, education and location) variables have similarities with the variables used in this research.

The VHA has built a centrally coherent Corporate Data Warehouse (CDW) to regulate patient-level data extracted from over 140 centers and 1200 free-standing outpatient clinics (Tarlov et al., 2017). The motive for the CDW program is to enhance VA's ability to assess the population-level rate of hospitalization, other related variables (income level, educational level, and location) and to assist in understanding how these variables vary across demographic groups (Tarlov et al., 2017).

Tarlov et al. (2017) revealed that CHD is the principal cause of hospitalization and responsible for approximately 1 in 3 death in the United States. Krishnamurthi et al. (2018) reported that for fiscal year 2017 about 8.45 million military veterans affected with CHD were hospitalized. Samir and Wolfgang (2017), argued that socioeconomic development and individual standard of living depends on educational level attainment and the extent to which education is acquired by individuals.

The independent variables for this study are the social determinants of job status, educational level, low-income, and location (Tarlov et al., 2017). According to Stacy,

Stefanovics and Rosenheck (2017), job losses among some veterans are related to misconduct during employment. The authors further suggest that some veterans are terminated from employment due to drug/alcohol use; psychological and/ or physical health issues were especially cited as causes for job loss (Stacy, Stefanovics & Rosenheck, 2017). Individual veterans who are homeless often have mental illness and drug use that impacted their job status and sometimes their readiness to secure steady employment (Stacy, Stefanovics & Rosenheck, 2017).

Veterans live in the rural areas more commonly than the overall population (Ohl et al., 2018). The VHA hospitals' geographical locations pose an obstacle to access to care for veterans who live in the rural areas (Ohl et al., 2018). A 2013, cohort study of VHA reviewed administrative data on county-level rural residence, non-VHA facilities accessibility, population, household earnings, and population health status that impacted veterans well-being (Ohl et al., 2018). The study estimated 16% of veterans (416,338 participants) resided in primary care deprived areas, and the majority (70.2%) dwelled in mental health shortage areas (Ohl et al., 2018). The evidence of lack of specialized health care physicians such as (cardiologist, pulmonologist, and neurologist) was prevalent among most of the veterans' who live in the rural areas (Ohl et al., 2018). The study suggested that VA initiatives to produce care for rural veterans residing more than 40 miles from VHA providers may not meaningfully expand their access to care, as these places are also lacking non-VHA facilities (Ohl et al., 2018). According to Tarlov et al. (2017), the U.S. veterans living in rural areas are more likely to have low-income and less education than their counterpart residing in urban centers.

Operational Definitions

Access to care: Access to health services "the timely use of personal health services to achieve the best health outcomes" (Office of Disease Prevention and Health Promotion, 2017, p.2).

Behavior Risk Factors Surveillance System: One of the nation's leading statistical data system health-correlated telephone surveys, with software and service (SAS) transport format. The database constituted Survey of Metropolitan/Micropolitan Area Risk Trends (SMART) with primary participants of veterans and the rest of American citizens (United States Census Bureau, 2017).

Blood pressure: According to AHA blood pressure is the process of applying Sphygmomanometer device in measuring the rate of force push by blood movement through the arteries. Normal blood pressure is 120 over 80 and less than 140 over 90 (120/80-140/90) (Benjamin et al., 2017).

Cardiovascular disease: America Heart Association (AHA) defines cardiovascular diseases (CHD) as the deterioration of the heart and blood vessel disease, which is usually referred to as heart disease (Benjamin et al., 2017).

Disabled-veteran: Defined as a service-connected individual who suffered conditions caused or aggravated by military service (Fried et al., 2018).

Educational level: Education is fundamental human development among all cultures globally. It is a significant source of population heterogeneity and it carries a substantial weight of its own based on categories (levels), the extent of which education

is acquired by an individual (Samir & Wolfgang, 2017). Education is an independent variable used in this study.

Health equity: The opportunity of everyone obtaining access to health care without an obstacle to health such as discrimination, poverty and other consequences (Benjamin et al., 2017).

Health equality: The ability to obtain equal access to care without social class and other determinants which posed as obstacle to access care. Health equality is sometimes mistakenly used interchangeably with health equity (Benjamin et al., 2017).

Income level: The monetary gain of resources involving gross salaries, wages, overtime earnings, commissions and bonuses. Income level is categorized in scale (low, middle, and high income level) (Chiswick, 1974).

Job status: An individual who is actively employed and receive an income for the services delivered on a continued basis for an extensive period or have no employment and no earnings (DVA, 2018).

Location: The position or site engaged or it has been made available for tenancy or marked by distinctive feature (Ioannis et al., 2020). Location is one of the factors of income level determinants and an independent variable used in this study.

Metropolitan/Micropolitan Area Risk Trends: Documentation used to verify the subset of the 2016 BRFSS that comprised some local area estimates. The selected areas are identified as metropolitan or micropolitan statistics areas (MMSAs) as officially defined by the Office of Management and Budget (OMB) (United States Census Bureau, 2017).

Military Healthcare System: The universal healthcare system accessible to active duty personnel, retirees, family members of active duty and retirees, Guard, Reserve personnel, surviving spouses and children (Blattner et al., 2018).

Physical Activity: AHA defines physical activity as the physical performance of the human body undergoing regular exercise to keep fit and to stay healthy (Benjamin et al., 2017).

Social Cognitive Theory: The reactions of human of opportunities, beliefs, emotional influence and cognitive capabilities advancement. This take place in the process of adopting social encouragement that express information and encourage emotional reactions through instructions, forming and social influence (Bandura, 1986)

Standard of care: Evaluated based on the performance of physicians' ability to treat patients' ailment and ability to create an interpersonal relationship through professional practice (Nishimura et al., 2017).

U.S. Military-veteran: The United States Department of Defense (DOD) and the Department of VA (VA) defines a veteran as an individual discharged from the active military, naval services, air services under the status of honorable discharge. An honorable discharge denotes the veteran's was appropriate during active service (VA, 2018).

VA Disability System: The VA has model for determine disability rating system in the form of cash monthly compensation for all eligible Armed Forces veterans (O'Hanlon et al., 2017).

Veterans Health Administration: The United States largest integrated health care system, the VHA (VA hospitals) delivers a variety of medical services to veterans and their families who are enrolled in the VA health care system (O'Hanlon et al., 2017).

Assumptions

I assumed that the secondary data used for the study was free of errors and omissions. However, the absence of any variable did not affect this research. In the process of assessing data, even in a listwise or in a case-wise manner, the data manager applied data deletion techniques to address any data mishaps.

Data quality was important in analyzing statistical collection of primary data or secondary data in the process of research study. The collection of data in this study refers to the quantitative data extracted from the BRFSS databank comprises of combined land, and cell phone dataset retrieved from the SAS V9.3 in the XPT transport format. The data generated by the BRFSS had no evidence of corruption, the questionnaires were not influenced, and it features reliability and validity that complied with data quality (Schwab et al., 2016).

There are possibilities of data missing of some variables with no control groups for intervention for a short-period analysis. This occurs when there are multiple variables imported into the data editor for further analysis; it usually does not affect the intended variables for the study (Schwab et al., 2016). The 2016 BRFSS study involves a national electronic survey of the U.S. Census Bureau. This is a retrospective work, for a two-year period, and any form of abuse of data cannot omit any data (United States Census Bureau, 2017).

I assumed that the participants completing the surveys for the BRFSS provided accurate information free of bias. I also believed that the SCT provided sufficient explanation for this area of study, which permitted the outcome to be used to influence positive social change. I assumed that this research design would yield the data needed to answer the research questions. The discussion of these assumptions improves the reliability and validity of the study.

Limitations

This study was subject to eight limitations as follows: (a) This study relied on secondary data with some variables that may be included and add value to the task, but may not be part of the dataset analyzed. (b) The possibility of any data missing may impact the analysis or the inferences extracted from this study, and nothing can be done to modify the databank to secure missing information. (c) There is a possibility of data bias resulting from sequence stages of recall measurement of the respondents (individuals with diverse levels of health literacy drive). (d) Quantitative research involves using a database which has been collected by an individual, group of people or an organization. (e) Because the secondary database was extracted from 2016 BRFSS files, I did not interact with participants directly. The BRFSS was solely responsible for collecting and conducting the survey for this study. The BRFSS organization in this study was critical, as veterans' access to care at different facilities and locations may have different CHD conditions profiles. This could have skewed the data. The BRFSS institution employees posed a potential limitation, because some may have been excessively negligent or overly critical, causing differences in their perception which might have been unrealistic. (f) The

research process features traits of validity and reliability to quantify the accuracy of data inference for the real outcome from the research study. According to Schwab et al. (2016), the main idea is that data quality is a universal issue that cannot be adjudicated by individual or group of people in terms of data source. This assumes that data from approved statistics source may not be of good quality, and proficient valuations may not produce poor quality analysis. (g) The general perception about data fraud is a limitation for data collection, data analysis, and data interpretation of actuality in any research study. Data reliance is an important doctrine underlying data quality in the process of data collection, data processing, and data evaluation. In quantitative research, the ability to assess the data limitations is an essential part of establishing data quality, which ensures the reliability of the research outcome (Schwab et al., 2016).

Scope and Delimitations

The data for the study was extracted from the 2016 BRFSS, the nation's leading data system health-correlated telephone surveys with software and service (SAS) transport format. The database constituted Survey of Metropolitan/Micropolitan Area Risk Trends (SMART) with primary participants of veterans and the rest of American citizens. The primary database survey is directly conducted by an individuals or organization, whilst the 2016 BRFSS was a secondary databank already collected by an organization. 2016 BRFSS was suitable for quantitative statistical analysis and interpretation of collected data using the Statistic Package Social Science (SPSS) editor. The BRFSS consisted of combined land and cell phone survey dataset retrieved from the SAS V9.3 in the XPT transport format. The BRFSS study of 2016 involved a national

electronic survey of the BRFSS, which was a retrospective work for 2-year period and any of the procedure were not studied. The BRFSS database comprised of the dependent and the independent variables needed for this study.

This research was delimited to the concepts and outcome of the overview of United States Department of Veterans Affairs healthcare delivery system. The healthcare system of the United States was addressed in extensively in the literature in several disciplines that will not be included in this study. The discussion of clinical treatment of CHD conditions, preventive medicine, surgical practices, medication, health coverage and other related materials were limited in this study. The study did not cover the overall demography of the U.S. military veteran, socioeconomic determination such as income-level, employment status, educational level and location impact on access to care was fundamental to this work. This research did not evaluate the effectiveness of the VHA system for providing care for veterans. The study did not assess the administrative procedures of the VHA hospitals nor any form of medical practices engaged by VHA medical centers across the nation.

Significance

This study made an original contribution and included knowledge to existing body of literature. The study explored an under-researched area of the extent to which veterans' access to care is associated with socioeconomic determinants of income-level, job status, education level, and location. This study may increase awareness about, concerns and options for the management of CHD among veterans with CHD whose income level is low, hampering their access to health care. Veterans with CHD who are

not eligible for VA disability compensation rating and have no reliable source of income may experience difficulties accessing care.

Access to care has been a fundamental socioeconomic issue among some veterans, including veterans with CHD. A reliable source of sustainable income, vocational skills and advanced education for employment opportunities post challenges to veterans with CHD. The results of this study may support VHA physicians and staff to encourage policies to regulate effective routine checkup for veterans' with CHD. VBA policy makers can use the findings to expand disability ratings to enable access to care for veterans suffering from CHD.

This research may also inform professional practice, the federal government, and the VHA about why some low-income veterans with CHD have little or no access to care. The VHA, health agencies, and federal government may use this information to improve access to care for low income veterans with CHD.

According to Taksler et al. (2018), an estimated $315 billion is spent to prevent chronic diseases such as tobacco-related conditions, alcohol misuse, hypertension, and other CHD risk factors responsible for high mortality among the global population. The treatment of cardiovascular diseases is a challenging and complicated task. CHD patients who undergo medical examination to identify symptoms of cardiovascular risk factors will be encouraged on follow-up procedures to minimize risk of premature death (Roberts et al., 2015).

In connection with the overview of CHD, this research may change how veterans with CHD, who have no access to VHA medical facilities, gain access to care. The

outcome of the study may be used to underpin decision-making to sustain policies, to implement of standard practices, and to strengthen decisions and guidelines needed to improve access to health care. Socioeconomic factors such as income level, educational attainment, employment status, and other economic disparities may be of disadvantage to individuals who are poor. Access to care can be improved so that CHD patients have the ability to receive needed care (Dwosky et al., 2018). Socioeconomic factors such as employment, educational level, income level, and location are indicators of better life that lead to access to care (Marmot et al., 1984).

The findings of this study have the potential to create social changes for veterans with CHD. These positive changes may include innovations in the process of acquiring disability rating; VRE programs to assist veterans with CHD to secure employment, veterans outreach programs to disseminate this findings, and improved access to care among veterans.

Summary and Transition

The United States veterans are vulnerable to CHD the leading cause of death worldwide, affects about 8.45 million. United States veterans are individuals honorably discharged from the active military, naval services, and air services. This study determined whether veterans' access to care is associated with income level determinants, such as job status, education level, and location. Social cognitive theory was the framework of this research used to examine the extent to which socioeconomic factors impacted access to care for veterans with CHD.

Access to care (ATC) is the timely use of personal health services to achieve the full result of recovery from illness. ATC pertains to the process of obtaining access to health care services (insurance coverage or cash), accessibility to a location of provision for health services (geographic availability) and receiving care by a provider (physician) (Office of Disease Prevention and Health Promotion, 2017, p.2). Adequacy of ATC is the basis of this research study, and plays an important role in the historical overview of the United States healthcare system. The efforts exerted by the past and present leaders over the decades to establish stable access to care in the United States healthcare system is important to this study. Social determinants of income level, job status, educational level, and location pose obstacles to access care and to control CHD risk factors (Samir & Wolfgang, 2017). The SCT model will facilitate the study of veterans' access to care as mentioned in the framework (Marmot et al., 1984). CHD remains the number one cause of death worldwide, recording an estimated 800,000 death annually in America (Pearson-Stuttart et al., 2017). CHD affects about six million individuals in the country annually, which is highly uneven across all social economic status (Pearson-Stuttart et al., 2017). In 2017, the AHA estimated 92.1 million Americans had been affected with one type of CHD (Benjamin et al., 2017). An estimated 8.45 million veterans have been diagnosed with CHD (Krishnamurthi et al., 2018). Fryar et al. (2016) determined veterans have high risk related CHD risk factors as compared to the nonveteran counterparts in the country. The United States spent substantially in the annual budget to control CHD risk factors based on the high mortality among the American population. The United States alone spent about $315 billion annually from 2015 to 2017 to prevent CHD-related conditions

such as tobacco-related diseases, alcohol addiction, and other cardiac risk factors (Taksler et al., 2018). CHD conditions have multiple aspects related to an individual lifestyle. However, the primary risk factors that lead to the CHD diseases are stress, lack of physical exercise, body mass, and poor eating habits. The CHD condition is critical in primary efficacy endpoint, which is the combination of CHD risk factors resulting in morbidity and high mortality. The global burden of CHD has prompted several organizations to promote and enforce good habits for quality living to minimize the death of the disease (Taksler et al., 2018).

Fryar et al. (2016) determined veterans have high risk related CHD risk factors as compared to the nonveteran counterparts in the country. The United States spent substantially in the annual budget to control CHD risk factors based on the high mortality among the American population. CHD conditions have multiple aspects related to an individual lifestyle. However, the primary risk factors that lead to the CHD diseases are stress, lack of physical exercise, body mass, and poor eating habits. The CHD condition is critical in primary efficacy endpoint, which is the combination of CHD risk factors resulting in morbidity and high mortality. The global burden of CHD has prompted several organizations to promote and enforce good habits for quality living to minimize the death of the disease (Taksler et al., 2018).

Gabrielian (2014) indicated that income-level determinants such as job status, educational level, and location may hamper veterans' access to health care. Hill et al. (2017) suggested that veterans who reside in rural parts of the country and have lower income and less education as compared to their counterpart in municipalities. In 2014,

United States military veterans, ages 18 to 64, were vulnerable to unemployment. Post 9/11 veterans possessed little or no college education, with 44.9% on the poverty line. The 55.1% of post 9/11 veterans above the poverty line had household earnings below $75,000 annually (Hill et al., 2017). In 2018, DVA statistics indicated that the living standard among some post-9/11veterans with zero income was projected at 4.8%, which needed improvement (DVA, 2018). The impact of social determinants such as income level, job status, educational level, and location have on access to care among veterans with CHD was the focus of this research.

According to Sing and Douglas (2012), ATC is essential for the betterment of individual well-being. Military veterans are entitled to have their health needs met (Hale-Gallardo et al., 2017). Veterans must be informed about educational interventions, social networks, and other programs that to improve their standards of living. It is in society's interest to fix the issues of low income, homelessness, and disease among veterans. The findings from this research is expected to inform the federal government, professional practice, and the VHA about why some low-income veterans with CHD have little or no access to health care.

Section 2 focuses on the methodology of this study including the approach of the analysis, sampling size, data collection, and tools that were used.

Section 2: Research Design and Data Collection

Introduction

The purpose of this study was to determine whether veterans' access to care is associated with income-level determinants of job status, education level, and location (Gabrielian, 2014). This section covers the following topics: research design and rationale, sampling, instrumentation, data analysis, threats to validity, ethical procedures, and a summary.

Research Design and Rationale

I used a cross-sectional, quantitative study to examine the extent to which social determinants, such as income level, educational level, job status and location, impact access to care of veterans with CHD. Quantitative data analysis improves the evaluation of data quality and it ensures current methods of analyzing data (Bowers, 2016).

Quantitative methodology conforms to the program guidelines designed for this study. The quantitative database, the Behavior Risk Factors Surveillance System (BRFSS), includes variables that were collected in a recognized or approved databank. Quantitative data sets with the desired variables (dependent, covariate, and independent) were selected to compute the research outcome. The quantitative data analyses validated the reliability of the BRFSS database in the process of data presentation through Statistics Package of Social Science (SPSS) software. Quantitative data analyses interpret the relationship between the variables used in the two research questions.

This research was designed to examine the extent to which social determinants, such as income level, educational level, job status, and location, impact access to care of

veterans with CHD. The independent variables for this study were job status, income level, educational level, and location. The dependent variable was veteran status and the covariate variable was CHD status. The BRFSS project is the largest continuously conducted health survey system in the world. In the BRFSS core survey, some core questions are asked every year (fixed core) and others are asked every other year (rotating core) to meet the organizational requirement. The 2016 BRFSS was the selected database. There were no expenses incurred in extracting the secondary (quantitative) data, but a significant amount of time was invested in the search for the right database with the relevant variables for the study.

Research Question 1: Among veterans with CHD, to what extent are employment status, education level, and level of income associated with little or no access to health care for CHD?

$H_0 1$ There is no significant association between “ever diagnosed with angina or coronary heart disease” and “educational level”

$H_a 1$ There is a significant association between “ever diagnosed with angina or coronary heart disease” and “educational level”

H_0 2 There is no significant association between *ever diagnosed with angina or coronary heart disease* and *income-level*

H_a 2 There is a significant association between *ever diagnosed with angina or coronary heart disease* and *income-level*

Research Question 2: Among veterans with CHD who are assessed as low-income, to what extent are employment status, education level, and level of income associated with routine checkup/delayed getting medical care?

$H_0 1$ There is no significant association between ever diagnosed with angina or coronary heart disease and length of time since last routine checkup

$H_a 1$ There is a significant association between ever diagnosed with angina or coronary heart disease and length of time since last routine checkup

$H_0 2$ There is no significant association between *ever diagnosed with angina or coronary heart disease* and *delayed getting medical care*

$H_a 2$ There is a significant association *between ever diagnosed with angina or coronary heart disease* and *delayed getting medical care*

Nature of the Study

These interpretations explained the various factors of income determinants of job status, employment level and location among the military veteran population. The quantitative methodology was useful to develop and understand the associations between various variables in the data analysis to suit the rationale of the research design. To advance the knowledge of the discipline, quantitative research must materialized with the prescribed variables consistent with the selection of research design and the appropriate strategies to rationale the outcome of the study (Schwab et al., 2016).

Methodology

Population

The quantitative methodology was the appropriate tool for this study. Quantitative methodology was relevant in this study and it was also the designated requirement for the research. The BRFSS data based was extracted to provide the variables needed for this research study. The participants of this study are military veterans 18 years and older who live in the United States permanently as residents. The Behavior Risk Factors Surveillance System (BRFSS) is one of the nation's statistical databases used for different types of research on the American population (United States Census Bureau, 2017). The BRFSS contains over 275 variables feasible for social science studies. The metropolitan or micropolitan statistics areas (MMSA) data based were selected among the Survey of Metropolitan/Micropolitan Area Risk Trends (SMART) BRFSS MMSA data. The SMART comprised of 486,238 or more responded by the public in the 2016 BRFSS combined landline telephone and cellular telephone survey, but 63919 were the veterans with CHD.

The BRFSS designated SMART documentation to verify the subset of the 2016 BRFSS that comprised some local area estimates. The selected areas are identified as metropolitan or micropolitan statistics areas (MMSA) as officially defined by the Office of Management and Budget (OMB) (United States Census Bureau, 2017).The database was modified by adding new ranking weights created to meet the 2016 population survey for individual eligible MMSA (United States Census Bureau, 2017).

Sampling and Sampling Process

The method of statistical sampling used in this study was purposive sampling. A non-probability sample designated primarily with the characteristics of a population and

the goals of the study (Crossman, 2018). Purposive sampling is useful in certain circumstances when a targeted sample needed to be identified quickly and where proportionality is not the primary concern of the sampling procedures (Crossman, 2018). The purposive sampling identifies the variations among individual variables in the process of applying sampling method in quantitative research. Purposive sampling of this nature was created to offer as much insight as possible into the event under the study (Crossman, 2018). The veteran population suffering from CHD incurred during active military service and their eligibility for access to care is the basis for this research (Fried et al., 2018).

Quantitative research studies involve a process wherein researchers regulate the sample sizes required for the work. The calculations of the sample will be done with a Pearson Chi-Square 2 x 2 Approach analyses (Faul, Erdfelder, Buchner, & Lang, 2009). This method was created to make use of the four essential parameters of the analysis: alpha level, power level, *N* sample size, and effect size ES (Faul et al., 2009). The need of the alpha level 35 is to identify the probability or to find significance/ false positive where p-value is set at 0.001. Moreover, the Pearson Chi-Square 2 x 2 levels defined the probability of identifying true significance/ true positive and is commonly set at .90 in the research. The *N* refers to the sample size and is the basic parameter to be solved. The effect size used for the research was 0.3. The study will use the Pearson Chi-Square 2 x 2 and a p-value less than .001 to determine the statistical significance. The SPSS software was used to compute the 2016 BRFSS sample size of 63,919 participants through

combined landline telephone and cellular telephone survey Pearson Chi-Square 2 x 2 tests were the statistical test used in the study (Faul et al., 2009).

Research Design and Quantitative Data

The purpose of this study is to determine whether veterans' access to care is associated with income level determinants such as job status, education level, and location. This study focuses on veterans with CHD whose income level determinants may impact their access to care. The following covariate variables were assessed for their impact on the association between veterans with CHD and income level: job status, education level, and location. The quantitative data analysis is the designated statistical methodology for this study.

The secondary data was extracted from the 2016 BRFSS, and it was the quantitative data for this study. The BRFSS consist of about 275 variables of which the variables intended for this research were retrieved.

Instrumentation (Extraction of Secondary Data)

For this study data was extracted from 2016 BRFSS file. The process involves already established instrumentation through data extraction process. The BRFSS is a collection of data gathered from survey questionnaires to designated participants (United States Census Bureau, 2017). The data collection by BRFSS was conducted through cellular phone and combined landline with questionnaire answered by participants, including civilians and military veterans. The data focuses on age and ethnicity that involves over 275 dependent, covariate, and independent variables which was used for this research.

The process for collecting data includes update recordings of responses for all the prescribed variables in the data from a broad range of American communities. BRFSS database involves the collection of data from (Metropolitan/Micropolitan) statistics areas (MMSA) variables which were used to calculate on participants available for conducting the survey (United States Census Bureau, 2017). The cellular telephone data used for the questionnaires were as follows:

- An open-ended text response from participants when provided.
- Information retrieved from the zip code provided by the respondents.
- The data was allocated to the largest county by age and race/ethnicity.

The data file instrumented for data collection and access was provided in ASCII and SAS transport formats (United States Census Bureau, 2017). BRFSS) is a broad portfolio designed for Metropolitan/ Micropolitan Area Risk Trends (SMART) database resources (United States Census Bureau, 2017). There are 275 individual variables in the 2016 BRFSS package; among them were the selection of designated variables (income level, job status, employment and location) suitable for the requirements of quantitative study.

Data Analysis Plan

The SPSS data editor was used to assess the analysis and to interpret the overall outcome of the tables and charts produced as a result of the research. The 2016 BRFSS database was part of the Land Line and Cell Phone 2016 Codebook presented in the case processing summary with a link to the BRFSS online codebook. The BRFSS databank has variables with duplicate cases, evidence of inconsistencies, and missing data which could not be transported to determine whether cases could be recollected (United States

Census Bureau, 2017). The BRFSS database was imported to Microsoft Excel for cleaning, screening, and procedures to enhance access to the SPSS data editor for further analysis of this research. Microsoft Excel eliminated any complications of transporting the BRFSS database of 275 variables into the SPSS data editor, without errors or omissions. The process of conducting such substantive statistics data involves complexity and other issues that pose threats to validity and bias. Data collection reveals the extent to which data was collected for statistical purposes and also for social science research.

Descriptive sampling was used for statistical analysis in which a predetermined number of observations were selected from a larger population. This methodology is applied to sample derived from a larger population depends on the type of investigation being assessed, but may include random sampling or systematic sampling (Morris & Pickens, 2017). The SPSS software was used to compute the 2016 BRFSS sample size of 486,238 participants from 15 states whose responses were collected through combined landline telephone and cellular telephone survey. The Pearson Chi-Square 2 x 2 Approach test was used to determine the alpha level and to identify the probability and the significance/false positive where p-value is set at 0.001 (Faul et al., 2009). The Pearson Chi-Square 2 x 2 Approach level defines the probability of identifying true significance/ true positive and is commonly set at .90 in research. To calculate the observation, the *N* refers to the sample size of 63919 (dependent/covariate variable) which was the basic parameter to be solved. The effect size used for the research was 0.3. Pearson Chi-Square 2 x 2 Approach and a p-value less than .001 to determine the

statistical significance differences among the dependent and independent variables used for the analysis (Faul et al., 2009).

Threats to Validity

Threats to validity in the 2016 BRFSS databank were possible in the process of collecting secondary data. The process of data collection was exposed to several uncertainties characterized with reliability, bias, and validity (United States Census Bureau, 2017). Individuals who have access to the databank can interfere with data through streaming and other process. The integrity underlying data collection was subjected to both external and internal threats to validity. The income level determinants of job status, educational level, and location were the independent variables in this research. These variables do not pose any threats to validity. The income level variable comprised of data from veterans who participated in the questionnaire and who provided responses about their income level without any bias. The job status variable revealed veterans' who participated in the research with responses to either actively working or having no employment. The educational level variable was based on responses from veteran participating in the survey. The location variable indicated the places in the country where veterans who participated reside.

External Threats to Validity

The process of data collection through cellular phone and combined landline was opened to biases by participants, who can easily influence the reliability and credibility of the answers to questionnaire (United States Census Bureau, 2017). Researchers have interspersed data collection with technology which has an impact on participants in relation to providing the right answers to questionnaires to avoid external influence as a

threat to validity (Morris & Pickens, 2017). Data collection is associated with technology advancement that encourages individuals to participate in the research in time to clear any threats in the process of data validation (Morris & Pickens, 2017). The process of transporting 2016 BRFSS database to the Statistics Package for Social Science (SPSS) editor can omit some potential variables which were threat to validity.

Internal Threats to Validity

The process of analyzing the various variables of BRFSS data base can be undermined by system errors which pose as internal threat to the data file (United States Census Bureau, 2017). The internal staff of the U.S. Census Bureau who coordinated the data collection could create possible bias among any of the variables causing internal threat to validity (United States Census Bureau, 2017). The 275 variables of the 2016 BRFSS databank have internal security that protected any internal threat to validity or any form of data omission. The 2016 BRFSS variables have standard data quality that conforms to the federal government directives and have no internal issues as to reliability and validity (United States Census Bureau, 2017).

Ethical Procedures

There were ethical procedures to be followed in the process of conducting statistical research from the public. The Institutional Review Board (IRB) approval was approved prior to conducting any research that involves human beings to ensure ethical procedures. The written concern acknowledges participants of the depth, the process, and any possible harm of the research. The BRFSS process of collecting information from participants was voluntary and they could decline to participate at any time. Participants

were furnished with information about the study before responding to the questionnaire. The information on the questionnaire and the participants' identity was anonymous and was not revealed to anyone except the researcher, even though the participants' personal information was recorded and kept privately. The United States Census Bureau employees who created the BRFSS database secured all the documents of the research (United States Census Bureau, 2017).

Summary

Section 3 covers research design and rationale, methodology, instrumentation, data analysis plan, research questions and hypotheses, ethical procedures, and threats to validity. It also includes the detailed description of the study variables which were (veteran status) as the dependent variable, the (CHD status) as the covariate and income level, job status, and location (independent variables). The research design and rationale were assessed in details to reflect the importance of this study. The quantitative methodology was the designated tool for collection of secondary data information on over 486,238 participants that constitute 275 variables of the BRFSS databank. The research design and data collection involved cell phone and combined landline information which was based on questionnaires from the counties and metropolitan areas in the country. The cellular phone data with questionnaires were as follows:

- An open-ended text response from participants when provided
- Information retrieved from the zip code provided by the respondents
- The data was allocated to the largest county by age and race/ethnicity

The records above were extracted from the 2016 BRFSS database with comprehensive explanation reflecting on the questionnaire above.

The data were collected from cellular phone, combined landline with questionnaires together information from the participants with no data errors. The data analysis plan was concise and it covers all the aspects of the database elements. The BRFSS databank software eliminated duplicate cases through the process of collecting data. It was reviewed for evidence of inconsistencies, and uncovers any missing data which could not be transported to determine whether cases could be recollected by the SPSS editor. The BRFSS databank was complicated, but with a comprehensive data analysis plan, it becomes effective tool suitable for this study.

The research question and hypothesis followed similar pattern as discussed in Section 1. There were two research questions and four hypothesis questions that were examined through Pearson Chi-Square 2 x 2 Approach in the SPSS data editor. The threats to both internal and external validity were addressed with emphasis on possible factors that can impact threats to validity and the credibility of the 2016 BRFSS database. The intended outcome of this research was to determine whether veterans' access to care is associated with income level determinants such as job status, education level, and location. Additionally, this study may increase the awareness, concerns, and options about minimizing the CHD diseases among veterans whose income level is hampering their access to health care.

Section 3: Presentation of the Results and Findings

The purpose of this quantitative study was to determine whether veterans' access to care is associated with income level determinants of job status, education level, and location. This section offers support for the research methodology and covers the following topics: research design and rationale, methodology, sampling and sampling process, quantitative data, instrumentation, data analysis, threats to validity (external and internal), and ethical procedures. Prior to describing the findings of this study, I explained how the data were handled involving the data translation development, why data were discarded, cleaning of data and preparation, and data organization. These are the topics discussed in Section 3: Research Questions, Data Handling, Data Translation, Cleaning, Coding, and Organizing. These topics were also listed, Dependent Variable Coding and Recording, Independent Variable Coding and Recording, Results, Access Summary Table and Summary.

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Research Questions

For this research study, there were two research questions and four hypotheses and four null hypotheses:

H_01 There is no significant association between "ever diagnosed with angina or coronary heart disease" and "educational level"

H_a1 There is a significant association between "ever diagnosed with angina or coronary heart disease" and "educational level"

H_0 2 There is no significant association between *ever diagnosed with angina or coronary heart disease* and *income-level*

H_a 2 There is a significant association between *ever diagnosed with angina or coronary heart disease* and *income-level*

Research Question 2: Among veterans with CHD who are assessed as low-income, to what extent are employment status, education level, and level of income associated with routine checkup/delayed getting medical care?

$H_0 1$ There is no significant association between ever diagnosed with angina or coronary heart disease and length of time since last routine checkup

$H_a 1$ There is a significant association between ever diagnosed with angina or coronary heart disease and length of time since last routine checkup

$H_0 2$ There is no significant association between *ever diagnosed with angina or coronary heart disease* and *delayed getting medical care*

$H_a 2$ There is a significant association *between ever diagnosed with angina or coronary heart disease* and *delayed getting medical care*

Data Handling

Data Transfer, Translating, Cleaning, Coding, and Organizing

The data transfer, data translation, cleaning, coding, and organizing are important elements in conducting data analysis for this study. The data process underwent each of the aforementioned processes to produce quality and reliable data for the study.

Data transfer. After receiving Institutional Review Board approval from Walden University (04-19-19-0543560), I retrieved data from 2016 BRFSS selected

Metropolitan/Micropolitan Area Risk Trends (SMART) study site and saved it in the document portfolio of my personal laptop. The file was protected with a password and the laptop also has passwords which were created by me. I was the only person with access to this information.

Data Translating. The data for the study were transferred from the original file to an Excel spreadsheet and formatted through the Software and Service (SAS) program for proper identification of the variables. The data were cleaned and organized thoroughly and it was imported to the SPSS for statistical analysis.

Data Cleaning. Data transferred from the BRFSS study site excluded any participants' personal identification. The file was saved with the appropriate variables such as the location of participants' response to the completed questionnaire, demographic information, and questionnaire outcome. There were no data missing for any variable. The original analysis reviewed 486,303 participants from 15 states across the country with individual 275 variables in the BRFSS dataset. Out of the 275 cases received, there were duplicate records of some variables which were modified during the porting process with the SAS program. The one dependent variable (with a covariate) represented 63919 participants as the numerator and four independent variables were selected from the main dataset (BRFSS) for the research.

Dependent variable Coding and Recoding

There was only one dependent variable and one covariate variable measured nominal value for this study. These variables were coded in a two-step coding process. The first coding process involved a dichotomy variable for correlation and Pearson chi-

square 2^x analysis. This coding process was intended to determine whether veterans had a positive or negative response to cardiovascular conditions when conducting the survey. Veterans who either declined or did not respond to the cardiovascular condition question were dropped from the study population. The recoding process ensured any missing cases did not impact the dataset and to ensure any errors identified were fixed.

Independent Variable Coding and Recoding.

The data set contained four independent variables (IVs) that included income level, job status, educational level, and location. These variables were used in the descriptive analysis and in correlation analysis. The variables conform to the quantitative data collection for this research, a procedure directed by the University. Each of these variables were originally coded and extracted from the Behavioral Risk Factors Surveillance System (BRFSS) selected Metropolitan/Micropolitan Area Risk Trends (SMART) which is a documented and tested subset of the 2016 BRFSS database. The BRFSS was created to provide some local area estimates that have been assessed as metropolitan or micropolitan statistical areas (MMSAs) as introduced by the office of Management and Budget (OMB) (United States Census Bureau, 2017).

A total of four independent variables were used as IVs: income level, employment level, job status, and location. Each variable was then coded using dichotomized variables; each yes was assigned a 1 and each no was assigned a 2. After completing the data cleaning, coding, recording, and organizing, the mean was calculated, standard deviation determined, and p values assigned for the demographic data and the four independent variables.

The Behavioral Risk Factor Surveillance System (BRFSS) questionnaire completes more than 400,000 adult interviews each year, making it the largest continuously conducted health survey system in the world (United States Census Bureau, 2017). In the BRFSS core survey, some core questions are asked every year (fixed core) and others are asked every other year (rotating core). States have the option of using additional modules, which were standardized sets of questions on specific topics. By 2011, the CDC had increased the number of available optional modules to 34 topic areas, including anxiety and depression, adverse childhood experiences, cancer screening, and general preparedness. Since 1993, BRFSS also included space for as many as four emerging core questions for high-priority topics such as vaccine shortage, H1N1, and influenza-like illness (United States Census Bureau, 2017).

Fifteen states participated in the first BRFSS, conducted in 1984. In this survey, BRFSS collected data on the six individual-level behavioral health risk factors associated with the leading causes of premature mortality and morbidity among adults: a) cigarette smoking, b) alcohol use, c) physical activity, d) diet, e) hypertension, and f) safety belt use. By 1993, BRFSS had become a nationwide system and the total sample size exceeded 100,000 (United States Census Bureau, 2017).

In 2016, 54 states or territories used Computer-Assisted Telephone Interview (CATI) systems. CDC supports CATI programming using the Ci3 WinCATI software package. This support includes programming the core and module questions for data collectors, providing questionnaire scripting of state-added questions for states requiring such assistance, and contracting with a Ci3 consultant to assist states. Following

guidelines provided by the BRFSS, state health personnel or contractors conduct interviews. The core portion of the questionnaire lasts an average of 18 minutes. Interview time for modules and state-added questions was dependent upon the number of questions used, but generally, they add 5 to 10 minutes to the interview (United States Census Bureau, 2017).

The BRFSS response rates are presented here as median rates for all states and territories.

Table 14

2016 BRFSS file on survey of the database

The 2016 BRFSS information on survey of the database

Survey	Year	Landline	Cellular
BRFSS	2016	47.7%	46.4%

BRFSS response rates are presented here as median rates for all states and territories.
Source: *https://www.cdc.gov/brfss/annual_data/2016/pdf/2016-sdqr.pdf(Page 4 of 27)*

Results

The BRFSS identified dependent and independent variables used in this study for the purpose of the current investigation through the SPSS editor. Table 15 below shows 2016 BRFSS database revealed the variables and their relevant Code book for the analysis. Table 15 also shows the variables of interest which identified veteran as dependent variable, income-level, employment, and education as independent variables. These variables are important and they were used in the Pearson chi-square test conducted for the interpretation and the findings of this study. Table 16 shows the socioeconomic status indicators summary. Table 18 shows veterans' status, Table 19 shows the location, Table 20 shows education, and Table 21 reflects the employment

status variable. The Pearson chi-square was used to produce Table 20 through Table 34 to answer the Research Questions 1 and 2 with their 4 hypotheses questions in this study.

Table 15

2016 BRFSS database with selected variables and codes

The BRFSS 2016 database selected variables and codes

Variables	BRFSS Code Book
1. Veteran	Are you a Veteran
2. Location	State FIPS Code
3. Coronary Heart Disease	Ever Diagnosed with Angina or Coronary Heart Disease
4. Education	Education Level
5. Employment	Employment Status
6. Income	Income Level
7. Check-up status	Length of Time since Last Routine Checkup
8. Medical Care access	Delayed getting Medical Care

BRFSS response rates are presented here as median rates for all states and territories. The variables in this study was extracted from the 2016 BRFSS database
Source: *https://www.cdc.gov/brfss/annual_data/2016/pdf/2016-sdqr.pdf (Page 4 of 27)*

Socioeconomic Status (SES) Variables

Table 16

Socioeconomic dependent and independent variables

Socioeconomic Status indicators Summary Table

		Are You a Veteran	Do You Currently Live in (State)	Ever Diagnosed with Angina or Coronary Heart Disease	Education Level	Employment Status
N	Valid	486238	239961	486301	486297	486230
	Missing	65	246342	2	6	73
Median		2.00	1.00	2.00	5.00	3.00
Mode		2	1	2	6	1

BRFSS response rates are presented here as median rates for all states and territories. The variables in this study was extracted from the 2016 BRFSS database
Source: *https://www.cdc.gov/brfss/annual_data/2016/pdf/2016-sdqr.pdf (Page 4 of 27)*

Veteran Status in overall sample

Table 17

Veteran status variable

ARE YOU A VETERAN *(United States Census Bureau, 2017)*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	YES	63919	13.1	13.1	13.1
	NO	421398	86.7	86.7	99.8
	Don't know/Not Sure	139	.0	.0	99.8
	Refused	782	.2	.2	100.0
	Total	486238	100.0	100.0	
Missing	System	65	.0		
Total		486303	100.0		

Veteran Status in overall sample

Veteran Status only

Table 18

Veteran status as dependent variable (*N*)

ARE YOU A VETERAN *(United States Census Bureau, 2017)*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	YES	63919	100.0	100.0	100.0

Of 486,238 completes, 63,919 (13.1%) indicated that they were veterans with CHD. Of the completes, 421,398 (86.7%) indicated that they were not veterans. The 63,919 (13.1%) veteran with CHD was the numerator to calculate the hypotheses.

Location

Table 19

The overall states representing the survey response for the location variable

STATE FIPS CODE *(United States Census Bureau, 2017)*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Alabama	935	1.5	1.5	1.5
	Alaska	519	.8	.8	2.3
	Arizona	1854	2.9	2.9	5.2
	Arkansas	831	1.3	1.3	6.5
	California	1047	1.6	1.6	8.1
	Colorado	2061	3.2	3.2	11.3
	Connecticut	1297	2.0	2.0	13.4
	Delaware	623	1.0	1.0	14.3
	District of Columbia	334	.5	.5	14.9
	Florida	5718	8.9	8.9	23.8
	Georgia	820	1.3	1.3	25.1
	Hawaii	1270	2.0	2.0	27.1
	Idaho	707	1.1	1.1	28.2
	Illinois	507	.8	.8	29.0
	Indiana	1386	2.2	2.2	31.1
	Iowa	880	1.4	1.4	32.5
	Kansas	1689	2.6	2.6	35.2
	Kentucky	1204	1.9	1.9	37.1
	Louisiana	618	1.0	1.0	38.0
	Maine	1439	2.3	2.3	40.3
	Maryland	2582	4.0	4.0	44.3
	Massachusetts	945	1.5	1.5	45.8
	Michigan	1342	2.1	2.1	47.9
	Minnesota	1941	3.0	3.0	50.9
	Mississippi	600	.9	.9	51.9
	Missouri	1068	1.7	1.7	53.5
	Montana	943	1.5	1.5	55.0
	Nebraska	1839	2.9	2.9	57.9
	Nevada	654	1.0	1.0	58.9
	New Hampshire	956	1.5	1.5	60.4
	New Jersey	707	1.1	1.1	61.5
	New Mexico	820	1.3	1.3	62.8

	New York	3782	5.9	5.9	68.7
	North Carolina	943	1.5	1.5	70.2
	North Dakota	735	1.1	1.1	71.3
	Ohio	1614	2.5	2.5	73.9
	Oklahoma	977	1.5	1.5	75.4
	Oregon	743	1.2	1.2	76.6
	Pennsylvania	748	1.2	1.2	77.7
	Rhode Island	636	1.0	1.0	78.7
	South Carolina	1735	2.7	2.7	81.4
	South Dakota	806	1.3	1.3	82.7
	Tennessee	818	1.3	1.3	84.0
	Texas	1639	2.6	2.6	86.5
	Utah	1213	1.9	1.9	88.4
	Vermont	851	1.3	1.3	89.8
	Virginia	1461	2.3	2.3	92.0
	Washington	2148	3.4	3.4	95.4
	West Virginia	911	1.4	1.4	96.8
	Wisconsin	608	1.0	1.0	97.8
	Wyoming	713	1.1	1.1	98.9
	Guam	254	.4	.4	99.3
	Puerto Rico	330	.5	.5	99.8
	Virgin Islands	118	.2	.2	100.0
	Total	63919	100.0	100.0	

There were 486,303 completes for the Location variable among which 63,919 (13.1%) were veterans with CHD that were retrieved from the States FIPS.

Education Level

Table 20

Educational Level variable for the study

EDUCATION LEVEL (United States Census Bureau, 2017)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never attended school or only kindergarten	28	.0	.0	.0
	Grades 1 through 8 (Elementary)	763	1.2	1.2	1.2
	Grades 9 through 11 (Some high school)	1774	2.8	2.8	4.0
	Grade 12 or GED (High school graduate)	17635	27.6	27.6	31.6
	College 1 year to 3 years (Some college or technical school)	19836	31.0	31.0	62.6
	College 4 years or more (College graduate)	23694	37.1	37.1	99.7
	Refused	189	.3	.3	100.0
	Total	63919	100.0	100.0	

Of 63,919 completes, 2,565 (4.0%) indicated that they had not graduated High School. Of the completes, 23,694 (37.1%) indicated that they had a college degree or beyond while 19,836 (31%) had 1–3 years of college.

Employment

Table 21

Employment status variable for the study

EMPLOYMENT STATUS (United States Census Bureau, 2017)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Employed for wages	18688	29.2	29.2	29.2
	Self-employed	4599	7.2	7.2	36.4
	Out of work for 1 year or more	960	1.5	1.5	37.9
	Out of work for less than 1 year	763	1.2	1.2	39.1
	A homemaker	406	.6	.6	39.8
	A student	592	.9	.9	40.7
	Retired	33719	52.8	52.8	93.4
	Unable to work	3866	6.0	6.0	99.5
	Refused	325	.5	.5	100.0
	Total	63918	100.0	100.0	
Missing	System	1	.0		
Total		63919	100.0		

Of 63,919 completes, 18,688 (29.2%) indicated that they were employed for wages while 4,599 indicated that they were self-employed. Of 63,919 completes, 5,589 (8.7%) indicated that they were out of work for one year or more (1.5%), less than one year (1.2%), or unable to work (6%). In this sample, 33,719 (52.8%) indicated that they were retired.

Income Level

Table 22

Income Level variable for the study

INCOME LEVEL (United States Census Bureau, 2017)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than $10,000	1152	1.8	1.8	1.8
	Less than $15,000	2111	3.3	3.3	5.1
	Less than $20,000	3193	5.0	5.0	10.2
	Less than $25,000	4904	7.7	7.7	17.9
	Less than $35,00	6549	10.2	10.3	28.2
	Less than $50,000	9499	14.9	14.9	43.1
	Less than $75,000	10364	16.2	16.3	59.4
	$75,000 or more	17451	27.3	27.5	86.9
	77	2763	4.3	4.3	91.2
	99	5582	8.7	8.8	100.0
	Total	63568	99.5	100.0	
Missing	System	351	.5		
Total		63919	100.0		

Of 63,919 completes, 10,364 (16.3%) indicated that they made $75,000.00 or more annually. Of the completes, 37,772 (59.3%) indicated that they made less than $75,000.00 annually while 11,360 made less than $25,000 annually.

Access Summary Table

Access to care variables selected from the BRFSS database and the BRFSS Code-Book were: Delayed getting Medical Care and Length of Time since Last Routine Checkup. These two variables (identified in the Code Book) were part of other independent variables ported into the SPSS data editor. The access to care variables (Delayed getting Medical Care and Length of Time since Last Routine Checkup) was used to interpret the findings of access to care as independent variables in this study. Table 24 represents the two variables of the access to care extracted from the SSPS editor.

Table 23

Healthcare Access Variables

HEALTHCARE ACCESS VARIABLES (United States Census Bureau, 2017)

		Length of Time Since Last Routine Checkup	Delayed getting Medical Care
N	Valid	486300	57302
	Missing	3	429001

Tables 24 through Table 29 reviewed the Healthcare Access of the United States veteran population only.

Getting a Check up

Table 24

Length of time since last routine checkup variable (access to care variable)

LENGTH OF TIME SINCE LAST ROUTINE CHECK UP (United States Census Bureau, 2017)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Within past year (anytime less than 12 months ago)	52673	82.4	82.4	82.4
	Within past 2 years (1 year but less than 2 years ago)	5038	7.9	7.9	90.3
	Within past 5 years (2 years but less than 5 years ago)	2650	4.1	4.1	94.4
	5 or more years ago	2672	4.2	4.2	98.6
	Don’t Know/Not Sure	541	.8	.8	99.5
	NEVER	248	.4	.4	99.8
	Refused	97	.2	.2	100.0
	Total	63919	100.0	100.0	

Of 63,919 completes, 52,673 (82.4%) indicated that they had a checkup within the past year (anytime less than 12 months ago) while a total of 57,711 (90.3%) had a checkup within the past 2 years (1 year but less than 2 years ago). Of 63,919 completes, 2,650 (4.1%) had a checkup within the past 5 years (2 years but less than 5 years ago), while for 2,672 completes (4.2%), it had been five or more years since their last checkup.

Getting Medical Care

Table 25

Delayed getting medical care variable (access to care variable)

DELAYED GETTING MEDICAL CARE (United States Census Bureau, 2017)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	You could not get through on the telephone	52	.1	.8	.8
	You could not get an appointment soon enough	398	.6	5.8	6.6
	Once you got there, you had to wait too long to see the doctor	184	.3	2.7	9.3
	The (clinic/doctor's) office was not open when you got there.	38	.1	.6	9.8
	You did not have transportation	164	.3	2.4	12.2
	Other—Go to Module 04.03.1 DLYOTHER	227	.4	3.3	15.5
	Do not know/Not Sure	53	.1	.8	16.3
	No, I did not delay getting medical care/did not need medical care	5718	8.9	83.5	99.8
	9	14	.0	.2	100.0
	Total	6848	10.7	100.0	
Missing	System	57071	89.3		
Total		63919	100.0		

Of 63,919 completes, 836 (9.8%) delayed getting medical care for reasons germane to the hospital or clinic while 444 (6.5%) delayed getting medical care for personal reasons. Of 63,919 completes, 5,718 (83.5%) did not delay getting medical care or did not need medical care.

The Case processing summary for the project

Table 26

Case processing summary of the 4 selected independent variable

CASE PROCESSING SUMMARY (United States Census Bureau, 2017)

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Ever Diagnosed with Angina or Coronary Heart * Education Level	63013	98.6%	906	1.4%	63919	100.0%
Ever Diagnosed with Angina or Coronary Heart * Income Level	54694	85.6%	9225	14.4%	63919	100.0%
Ever Diagnosed with Angina or Coronary Heart * Length of Time since Last Routine Checkup	62856	98.3%	1063	1.7%	63919	100.0%
Ever Diagnosed with Angina or Coronary Heart * Delayed Getting Medical Care	1046	1.6%	62873	98.4%	63919	100.0%

The non-parametric approach was used to infer a Pearson Chi-Square 2 x 2 Approach. The approach was effective to interpret the hypotheses of the analysis through the Case Processing Summary in Table 32 and the rest of the analyses below.

Ever Diagnosed with Angina or Coronary Heart Education Level

Table 27

Crosstab of Educational level variable and CHD

CROSSTAB (United States Census Bureau, 2017)

			EDUCATION LEVEL		
			No College	Some College to College Degree	Total
Ever Diagnosed with Angina or Coronary Heart *	YES	Count	2631	5176	7807
		Expected Count	2464.0	5343.0	7807.0
	NO	Count	17257	37949	55206
		Expected Count	17424.0	37782.0	55206.0
Total		Count	19888	43125	63013
		Expected Count	19888.0	43125.0	63013.0

Chi-Square Tests

Table 28

Chi-square test of CHD with Educational status

CHI-SQUARE TESTS (United States Census Bureau, 2017)

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	18.871[a]	1	.000		
Continuity Correction[b]	18.758	1	.000		
Likelihood Ratio	18.683	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	18.871	1	.000		
N of Valid Cases	63013				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 2464.03.

b. b. Computed only for a 2x2 table

$H_0$1 There would be no significant interaction between Ever Diagnosed with Angina or Coronary Heart Disease and Reported Educational Status, $p < .001$. The finding indicated H_a1 There was a significant interaction between Ever Diagnosed with Angina or Coronary Heart Disease and Reported Educational Status, $\chi^2(1) = 18.871$, $p < .001$. Therefore, we reject null hypothesis one.

Ever Diagnosed with Angina or Coronary Heart Disease Income Level

Table 29

Crosstab of Income level variable and CHD

CROSTAB (United States Census Bureau, 2017)

			INCOME LEVEL		
			Less than $35,00	Less than $50,000 up to $75,000 or more	Total
Ever Diagnosed with Angina or Coronary Heart Disease	YES	Count	2563	4184	6747
		Expected Count	2175.9	4571.1	6747.0
	NO	Count	15076	32871	47947
		Expected Count	15463.1	32483.9	47947.0
Total		Count	17639	37055	54694
		Expected Count	17639.0	37055.0	54694.0

Chi-Square Tests

Table 30

Chi-square test of CHD with Income level

CHI-SQUARE TESTS (United States Census Bureau, 2017)

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	115.932[a]	1	.000		
Continuity Correction[b]	115.633	1	.000		
Likelihood Ratio	113.208	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	115.930	1	.000		
N of Valid Cases	54694				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 2175.93.

b. Computed only for a 2x2 table

$H_0$2 There would be no significant interaction between Ever Diagnosed with Angina or Coronary Heart Disease and Reported Income Level, $p < .001$. The outcome was that;

H_a2 There was a significant interaction between Ever Diagnosed with Angina or Coronary Heart Disease and Reported Income Level, $\chi^2(1) = 115.932$, $p < .001$.

Therefore, we reject null hypothesis two.

Ever Diagnosed with Angina or Coronary Heart Disease Length of Time since Last Routine Check up

Table 31

Crosstab of length of time last routine checkup (access to care) variable and CHD

Crosstab (United States Census Bureau, 2017)

			LENGTH OF TIME SINCE LAST ROUTINE CHECKU		
			Within past year OR Past two years	Five or more years	Don't Know/Not Sure
Ever Diagnosed with Angina or Coronary Heart Disease	YES	Count	7389	310	88
		Expected Count	7068.3	654.1	64.5
	NO	Count	49666	4970	433
		Expected Count	49986.7	4625.9	456.5
Total		Count	57055	5280	521
		Expected Count	57055.0	5280.0	521.0

Chi-Square Tests

Table 32

Chi-square test of length of time last routine checkup (access to care) variable and CHD

Chi-Square Tests (United States Census Bureau, 2017)

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	232.967[a]	2	.000
Likelihood Ratio	275.527	2	.000
Linear-by-Linear Association	16.634	1	.000
N of Valid Cases	62856		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 64.54.

$H_0$3 There would be no significant interaction between Ever Diagnosed with Angina or Coronary Heart Disease and reported Length of Time since Last Routine Checkup, $p < .001$. The finding indicated H_a3 There was a significant interaction between Ever Diagnosed with Angina or Coronary Heart Disease and reported Length of Time since Last Routine Checkup, $\chi^2(2) = 232.967$, $p < .001$. Therefore, we reject null hypothesis three.

Ever Diagnosed with Angina or Coronary Heart Disease Delayed Getting Medical Care

Table 33

Crosstab of delayed getting medical care (access to care) variable and CHD

CROSSTAB (United States Census Bureau, 2017)

			DELAYED GETTING MEDICAL CARE		
			Delay due to my action	Delay due to VA action	Total
Ever Diagnosed with Angina or Coronary Heart	YES	Count	92	63	155
		Expected Count	92.8	62.2	155.0
	NO	Count	534	357	891
		Expected Count	533.2	357.8	891.0
Total		Count	626	420	1046
		Expected Count	626.0	420.0	1046.0

Chi-Square Tests

Table 34

Chi-square test of delayed getting medical care (access to care) variable and CHD

CHI-SQUARE TESTS (United States Census Bureau, 2017)

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.018[a]	1	.892		
Continuity Correction[b]	.002	1	.963		
Likelihood Ratio	.018	1	.892		
Fisher's Exact Test				.929	.480
Linear-by-Linear Association	.018	1	.892		
N of Valid Cases	1046				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 62.24.

b. a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 62.24.

$H_0$4 There would be no significant interaction between Ever Diagnosed with Angina or Coronary Heart Disease and reported Delayed Getting Medical Care, $p < .001$. The result was H_a4 There was no significant interaction between Ever Diagnosed with Angina or Coronary Heart Disease and reported Delayed Getting Medical Care. Therefore, we fail to reject null hypothesis four.

Summary

The BRFSS was initiated in 1984, with 15 states collecting surveillance data on risk behaviors through monthly telephone interviews. Over time, the number of states participating in the survey increased; BRFSS now collects data in all 50 states as well as the District of Columbia and participating US territories. During 2016, all 50 states, the

District of Columbia, Puerto Rico, Guam, and the US Virgin Islands collected BRFSS data. In the overview document, the term “state” is used to refer to all areas participating in the BRFSS, including the District of Columbia, Guam, the Commonwealth of Puerto Rico, and US Virgin Islands.

BRFSS’s objective is to collect uniform state-specific data on health risk behaviors, chronic diseases and conditions, access to health care, and use of preventive health services related to the leading causes of death and disability in the United States. The Behavioral Risk Factor Surveillance System (BRFSS) Survey takes about 30 minutes to complete. The 2016 reported response rate was around 47%. The BRFSS 2016 collected data on the six individual-level behavioral health risk factors associated with the leading causes of premature mortality and morbidity among adults: a) cigarette smoking, b) alcohol use, c) physical activity, d) diet, e) hypertension, and f) safety belt use. The data set of the study comprises dependent variable which was veterans’ status and the independent variables were income level, employment level, educational level, and location. This study will quantitatively examine the Pearson Chi-Square 2 x 2 Approach and association between reported to observe the findings of the project.

CHD and education level variable was observed with a results of, χ^2 (12) = 23.57, χ^2(1) = 18.871, p < .001. An association between reported CHD and income was observed, χ^2 (1) = 115.932, p < .001. An association between reported CHD and getting checkups was observed, χ^2 (2) = 232.967, p < .001. An association between reported CHD and delays in getting medical attention was not observed. Access to care impacts the well-being of United States Armed Forces veterans. As defined previously, access to

care is a tremendous burden on society especially among veteran population and by understanding if there is a correlation association between reported CHD and getting checkups for those who have no access to care could lead to improving access to care. This research was designed to fill a gap in understanding by focusing on the results of related to access to care among veterans (Blattner et al., 2018).

Section 4 will involve information on the implications of study results and ways to apply these findings in practice. Through the findings of this research, I plan to provide further awareness into whether intervention in gaining access to care among some veterans population will improve the well-being of their lives.

Section 4. Application to Professional Practice and Implication for Social Change

Introduction

The purpose of this quantitative study was to determine whether veterans' access to care is associated with income-level determinants such as job status, education level, and location. This study is important because analyzing and understanding the influence of social determinants-job status, education level, location, and income level on access to care may help improve health outcomes and quality of life for this group. It is also important because it may increase the awareness, concerns, and options about the management of the disease among veterans with CHD whose income was hampering their access to health care. Access to care has been a fundamental socioeconomic issue among some veterans, and veterans with CHD are not an exception.

Findings and Implications

To analyze the data, the following analyses of Pearson chi-square were conducted: descriptive analyses, frequency distribution, and BRFSS codebook label with chi-square methodology. The BRFSS project is the largest continuously conducted health survey system in the world. In the 2016 BRFSS core survey, some core questions are asked every year (fixed core) and others are asked every other year (rotating core) to meet the organizational requirements.

Veterans with CHD data (63,919 participants) were used to determine whether their results indicated any correlation with income level, employment, education, and access to care variables. The data showed that for 26.3% of the sample, it had been 3 years or more since they last had health coverage. Table 24 in Section 3 displays the

overall healthcare access variables, and Tables 25 through Table 30 show the analysis of healthcare access of the sample of veterans. The findings of this study suggest that income level, education level, and employment level do not influence access to care among veterans with CHD. The statistical analyses further suggest that there is no relationship between the social economic factors-such as income level, employment status, and educational level. The access to care variables (delayed getting medical care) had a strong relationship for veterans with CHD as observed. However, access to care variable of length of time since last checkup was revealed in the literature. This shows that mandatory checkups will enhance medical practices and personal management practices for individuals with CHD (Benjamin et al., 2017). Further, the socioeconomic factors also suggest a significant association between ever diagnosed with angina or coronary heart disease and reported length of time since last routine checkup (see Access to Care variable, Table 37 in Section 3).

Additionally, findings of this study suggest that the high degree of confidence for veterans' relationship between "ever diagnosed with angina or coronary heart disease" and "reported delayed getting medical care" as negatively impacting veterans' access to care. These conclusions are contrary to those peer reviewed literature, which show that veterans with in-depth knowledge and adequate information about CHD had more confidence seeking care.

The theoretical framework for this research was based on STC, which considers social factors such as employment inequalities, educational level, income constraints, and locality as critical indicators of prosperous living (Marmot et al., 1984). McGinnis

and Foege (1993) used SCT to conclude that half of all deaths in America were related to behavioral factors (health related behavior), which depended on social factors of income level, education, job status and location. This framework was applied to the present research to understand how social economic factors such as income level, education level, employment level, and location impact some veterans' access to care.

Therefore, the hypothesis: $H_0$1, for veterans there is association between educational status, income level, and Ever Diagnosed with Angina or Coronary Heart Disease and Reported Educational Status, $p < .001$ was rejected indicating a disagreement with other findings in literature. Findings indicated H_a1 there was a significant interaction between Ever Diagnosed with Angina or Coronary Heart Disease and Reported Educational Status was accepted. Even when each of these demographic variables were analyzed individually, they revealed no significant impact on the participant's ability to access care: Educational Status, χ^2 (1) = 18.871, $p < .001$, Income Level, χ^2 (1) = 115.932, $p < .001$, Length of Time since Last Routine Checkup, $\chi^2(2) = 232.967$, $p < .001$.

Limitations

The limitations for this study include obtaining secondary data for research analysis, the difficulties in finding the right database, and obtaining the approval from the owners of the database. There are limitations involving difficulties in identifying all the variables needed for the research in one database and also assessing the code book for the variables. The codebook validation is time consuming and it can be challenging to assign all the variables to their respective codes. The possibility of any data missing may impact

the analysis or the inferences extracted from this study. In this instance, nothing can be done to modify the databank to secure missing information. The quantitative research process features traits of validity and reliability to quantify the accuracy of data inference of the real outcome from the research study. According to Schwab et al. (2016), the main idea is that data quality is a universal issue that cannot be adjudicated by individual or group of people in terms of data source.

In quantitative research, the ability to assess data limitation is an essential part of establishing data quality to secure reliability of research outcome (Schwab et al., 2016). Data reliance measures the extent which data can be reliable. The quality of data validates the reliability of the data accountable for analytical studies.

Recommendations

Based on the outcomes of this project, practice guidelines for institutions such as Veteran Services Organizations (VSO), Veterans Rehabilitation and Educational (VRE), Intake Processing Centers (IPC), the Veterans Service Representatives (VSR), that engage in educating veterans are critical. The analysis of educational level of the 63,919 veterans who participated in the survey revealed that 2,565 (4.0%) had not graduated High School. There were 23,694 (37.1%) participants who indicated that they had a college degree or beyond, while 19,836 (31%) had one to three years of college. I recommend continuing education of veterans through regular workshops and social networks to close the knowledge gap, and to better inform this population of health disparities in terms of medical care and compensational benefits through regular workshops and social networks. Protocols for making sure veterans are well-informed

regarding eligibility for access to care should be implemented to ensure effective participation in acquiring health care benefits. Income level findings from this study revealed 37,772 (59.3%) made less than $75,000.00 annually, while 11,360 made less than $25,000 annually. The effective use of vocational rehabilitation programs will improve opportunities to secure sustainable medical care ensuring the well-being and social change for veterans.

One of the key findings of this research was employment level among veterans. This study indicated out of the 63,919 veteran participants, 18,688 (29.2%) were employed for wages, while 4,599 indicated that they were self-employed. There were 5,589 (8.7%) veterans out of work for one year or more (1.5%), less than 1 year (1.2%), or unable to work (6%). In this sample, 33,719 (52.8%) indicated that they were retired. Among this 52.8% are veterans who possibly retired from Individual Un-employability (IU). IU is VA program for unemployable veterans with 50% to 70% disability) or choose to live on their 100% disability rating. I recommend that Chapter 31, VA program for Vocational Rehabilitation and Education (VRE), be expanded effectively to assist veterans who are struggling to obtain access to care. The VRE program is designed to assist veterans with service-connected disabilities and zero disabled veterans (veterans who have 0% disability compensation) to earn access to care and to achieve independence in daily living (Borne et al., 2017). The Vocational Rehabilitation outreach has to be effectively administered to secure educational training, employment, and income for eligible veterans. There is the need to disseminate the information of the Vocational Rehabilitation program effectively to reach every veteran who may be eligible

to participate in it. Regular workshops conducted among the VAMC, VBA, VSO and other VA affiliates such as GI Forum, Volunteer America Veterans and America Legion to educate veterans about their benefits will close the gap of the high unemployment among some veterans.

There are some veterans who have no idea of their entitlements, where to go to receive assistance, or how to apply for their VA benefits. Despite standardized strategies to inform veterans of their benefits through social media networks by encouraging them of easy access to eBenefit to apply for VA benefits, the scheme is failing to reach its target. The recommendation for informing veterans on their VA benefits and access to VBA Regional offices to apply for benefits is crucial. The eBenefit scheme needs to be campaigned extensively through workshops, social networks, and distribution of brochures/newsletters to inform the veteran population about the resources available for them and the appropriate way to secure the benefits.

Serving one's country honorably results in earned benefits that include access to health care in the VA system. This study shows that out of the 63,919 veterans with CHD who participated in the survey, 836 (9.8%) delayed getting medical care for reasons germane to the hospital or clinic, while 444 (6.5%) delayed getting medical care for personal reasons. There were 64 (26.51%) veterans who had last had health coverage less than six months (17.4%) or more than 6 months, but not more than 1 year ago (9.1%). About 79 (32.6%) veterans had been more than 3 years without health coverage, while 48 indicated never (10.7%) or that they were not sure (9.1%) when last had health coverage. Expansion of health care programs, such as mandatory coronary heart condition

screenings, is essential for veterans to make them aware of CHD status. The mandatory screening can be done through the VAMC facilities mobile vehicles visiting VA assisted homes, and VA suburban clinics. Veterans are entitled to access to this care to sustain their well-being for the efforts expended during active service. Meeting this obligation effectively fulfills President Lincoln's promise: "To care for him who shall have borne the battle and for his widow, and his orphan" by serving and honoring the men and women who are America's veterans (VHA, 2018, p.1).

Recommendations for Future Research

Expanded study should be conducted on the correlation between veterans' income level and access to health care, and the impact improved access to healthcare has on mortality rates among veterans with CHD. Researchers could also examine ways to close the gap in access to care among some veterans with CHD who have no access to care. For example, future research is needed in Federal government programs for universal health care coverage for all military veterans that will eliminate the struggle among some veterans who have no or limited access to care. The process could be part of the coordinated care programs discussed in Section 1 under the Affordable Care Act.

Dissemination Plan

The VAMC staffs across the country have to be held accountable for assisting veterans with CHD to understand their health needs and to ensure that standardized personal management is practiced. As such, I will share findings with my fellow veteran community, colleagues at VA Regional Office in Houston Texas, and other VA associates such as the Veteran Services Organizations (VSO), Veterans Rehabilitation

and Educational (VRE), the Intake Processing Centers (IPC), the Veterans Service Representatives (VSR), GI Forum, Volunteer America Veterans, and America Legion. I plan to disseminate findings to local Veterans Administration Medical Centers (VAMC) leaders with the intention to expose the gaps in access to care for veterans with CHD. The plan for external dissemination includes presenting the findings to VAMC, other health care institutions and providers to raise awareness of “Length of Time since Last Routine Checkup” for veterans with CHD is conducted. CHD is a life threatening condition and routine checkup will help close access to care gap identified in this study.

The findings from this project may also be used to influence the VAMC and other healthcare providers to conduct regular screening on veterans with CHD to ensure the patients are receiving proper interventions to yield positive results.

Social Change Implication

The United States Armed Forces veterans are individual discharged from the active military, naval services, air services under the status of honorable discharge, meaning veterans with proper conduct during active military service (DVA, 2018). The wellbeing of veterans’ is a prime issue in this research. Access to health care has been a political issue that has faced past and current administrations. The VA Strategic Plan Framework reflects on its mission: To fulfill President Lincoln’s promise "To care for him who shall have borne the battle and for his widow and his orphan" by serving and honoring the men and women who are America’s veterans (VHA, 2018, p.1).

Access to care is necessary to better veterans with CHD health conditions and social well-being. The outcomes from the study of how the factors of income level,

education level, employment level, and location impact the ability to sustain access to care can be used to promote positive social change among some veterans. The findings indicated 52,673 (82.4%) had a checkup within the past year (anytime less than 12 months ago), while a total of 57,711 (90.3%) had a checkup within the past 2 years (1 year but less than 2 years ago). A mandatory routine medical checkup by the VAMC will inform veterans of the status of their condition and could result in positive social change. Based on this result, the VA core values of Integrity, Confidence, Advocacy, Respect and Excellence (ICARE) have not been fully adhered to when veterans are discriminated against based on disability rating. The access to VAMC has to be free for all veterans to sustain better health and to impact positive social change. According to this study's findings, a gap exist for screening that needs to be closed. Closing this gap will result in improved quality of life for the 9.7% of veterans in this study who have not had a medical check-up in the last two years. There is the need to implement strategies to eliminate the challenges facing veterans to access health care and to ensure health care programs for coronary heart screening are effectively adopted by the VAMC.

According to the findings, among the 63,919 of the veterans surveyed 2,650 (4.1%) indicated they received a checkup within the past 5 years (2 years but less than 5 years ago). This gap could be closed if effective CHD screening is implemented. The improvement in income level, education, and employment status will encourage health coverage for veterans with CHD by restoring active interaction of social status, as well as their positive contributions to social responsibilities. Furthermore, effective improvement of health disparities and CHD personal management through standard guidelines may

promote their knowledge on CHD healthy living in the society. This study revealed 52,673 (82.4%) veterans' surveyed had a checkup within the past year (anytime less than 12 months ago), while a total of 57,711veterans (90.3%) had a checkup within the past 2 years (1 year but less than 2 years ago). Better medical management among veterans with CHD will encourage patients to attend to their health needs, which will strengthen their family relationships resulting in positive social change. Expansion of outreach programs by VA affiliates and other veterans' organizational services may encourage awareness of access to care eligibilities among some veterans, and impact their social image. Consequently, veterans with CHD may become more active and productive in the society as a result of increased access to care and sustained medical treatment.

The VHA, VBA, federal law makers, other veterans' services organizations, health care institutions and the general public can use the outcomes of this study to understand the extent to which the factors such as income level, educational level, employment status, and location impact some veterans' access to care. The Veterans Benefit Administration and law makers dealing with veterans' access to health care issues can utilize these findings to tailor their services to veterans. For instance, they may be able to provide educational information to the veterans regarding the impact of access to care on their health status. The awareness created can instill a positive social change in the veteran population regarding factors that impact access to care.

The multiple strategies implemented by the VA are intended to fulfill President Lincoln's vision and the primary mission of the organization. The findings from this study may be used to educate the government agencies (VA system), politicians, Veteran

Service Organization (VSO), veterans, Federal agencies, state agencies, the general public, and other health agencies to support implementation of any programs and policies that may assist in sustaining veterans' access to care and their well-being in the society.

Conclusion

This quantitative, correlational study examined the extent to which certain factors such as income level, employment status, educational level and location were associated with accessing care among some veterans. The findings of this study suggest that income level, education level, and employment level do not influence the ability to obtain access to care among some veterans with the CHD condition. The statistical analyses from the study further suggest that there are no connections between the social economic factors such as income level, employment status, educational level, and the access to care variables for veterans with the CHD condition. Literature revealed that socioeconomic factors such as employment inequalities, educational level, income level, and location are indicators of better life that pave access to care (Marmot et al., 1984). Socioeconomic factors of income level, educational attainment, employment status, and other economic disparities may disadvantage individuals who are poor. This situation may be corrected for CHD patients who gain access to care (Dwosky et al., 2018).

The results of this study further suggest that the access to care variables such as length of time since last routine checkup and delayed getting medical care are critical to the pursuit of the health needs among some veterans. Furthermore, nothing could be more important for veterans than to understand that effective health care access can be used to manage CHD. Poor socioeconomic standards show a prevalence of CHD risk factors for

morbidity and premature mortality worldwide (Stringhini et al., 2017). CHD is the leading cause of death worldwide and about 8.45 million military veterans are affected by the conditions which made it a priority for this research (Krishnamurthi et al., 2018). Effective information and heightened concerned about CHD treatment from the physician to the patient is important. The resulting individualized action plan can make a difference in lives of those veterans affected.

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