Demographic Variables and Awareness of the Risk Factors of Cardiovascular Disease (CVD) by Female Civil Servants in Uyo

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ABSTRACT

The study sought to assess the demographic variables and the extent of awareness of the risk factors of cardiovascular disease (cvd) by female civil servants in Uyo. The descriptive design of a cross sectional type was used for the study. The study area was the entire Akwa Ibom State Secretariat Complex known as Idongesit Nkanga Secretariat. The population of this study consisted of 4803 female civil servants in the Akwa Ibom State secretariat complex, Uyo. Stratified random sampling techniques was used for the study. The two main instruments used for the study were questionnaire. Split-half reliability test using Cronbach's statistical analysis to determine the consistency of the instrument. Reliability coefficient obtained was 0.91 and this was high enough to justify the use of the instrument. The data was analyzed using inferential and descriptive statistics with the help of SPSS version 20.0 at .05 level of significance. The study concluded that there is no significant relationship between demographic variables of age and educational level of the respondents and the level of awareness of CVD risk factors. It was therefore recommended that Policy makers should establish policy guidelines that will enhance adequate and urgent dissemination of information about CVD to the women and general population of Akwa Ibom State

KEYWORDS: Demographic variables Awareness, Risk Factors, Cardiovascular Disease, Civil Servants.

Introduction

Cardiovascular diseases (CVDs) are a group of disorders of the heart and blood vessels and they include; Coronary Heart Disease – disease of the blood vessels supplying the heart muscle; leading to heart attack, Cerebrovascular disease – disease of the blood vessels supplying the brain; leading to stroke, Peripheral artery disease – disease of the blood vessels supplying the arms and legs, Rheumatic heart disease – damage to the heart muscle and heart valves from rheumatic fever, caused by streptococcal bacteria, Congenital heart disease – malformation of heart structure existing at birth , Deep vein thrombosis and pulmonary embolism – blood clots in the leg veins, which can dislodge and move to the heart and lung (WHO 2012). Women's awareness of CVD and their perception of their risk for heart disease can greatly influence their decision making process in regard to health care decision. The general public still perceives heart disease as primarily a health problem for men. Evidence show that women perceive breast cancer as greater risk than cardiovascular disease (Berry, Steaarns, Courneyam McGannon, Norris, Rodgers & Spence, 2016). These misperceptions may lead women to underestimate their risk for CVD and fail to seek early intervention to prevent unnecessary morbidity and mortality.

Statement of the Problem

Cardiovascular disease is the leading cause of death among women, as an estimated 90% of women have at least one risk factor for heart disease, and the statistics about women heart disease is startling (Guameri, Obeg & StÖppler, 2015). The researcher in her four decades of life has witnessed and heard of myriads of cases "Slumping and dying", in the offices, on walkways, in the market places, on the football fields, party houses, on the car steering, farms, homes and even in the churches while preaching or singing. It is baffling and seems to be in an epidemic proportion. Many of these cases are attributed to witchcraft attack by relatives and being struck by the ghosts (spirits) invoked by an enemy. Churches and prophets are not helping matters. Some of the "slumped" cases known had been known to be hypertensive. Therefore, the purpose of this study is to determine the level of awareness of the risk factors for cardiovascular disease (in particular heart attack and stroke) by the female civil servants in Uyo.

Research Questions

This study sought to answer the following question:

1. What is the level of awareness of the risk factors for cardiovascular disease (in particular stroke and heart attack) by the female civil servants in Uyo?

Hypotheses

1. There is no significant relationship between the demographic variables (age and educational level) of the female civil servant in Uyo and their level of awareness of cardiovascular disease risk factors.

Literature Review

Concept of Cardiovascular Disease

Cardiovascular disease (CVD) is a term that refers to more than one disease of the circulatory system including the heart and blood vessels, whether the blood vessels are affecting the lungs, the brain, kidneys or other parts of the body. Within the heart, disease can affect the physical structure including the valves or the muscle wall. Cardiovascular disease also includes conditions of vascular function, inflammation or the electrical regulation of the heart beat (WHO 2012).

Types of Cardiovascular Disease (CVD_S)

According to Public Health Agency of Canada (2010), types of cardiovascular diseases can be identified;

1. **Ischaemic heart disease:** This is the most common type of cardiovascular disease in industrialized countries of the world. It refers to problems with circulation of blood to the heart muscles. A partial blockage of one or more of the coronary arteries can result in lack of enough oxygenated blood (Ischaemic) thus causing symptoms such as angina chest pain and dyspnoea (shortness of breath) complete blockage of an artery causes necrosis (damage to the tissues) or a myocardial infarction commonly known as "heart attack"

2. **Cerebrovascular disease (stroke):** Refers to problem with the circulation of blood in the blood vessels of the brain. A blockage with effects lasting less than 24 hours is referred to as a transient attack. A complete blockage with long term effect is referred to as a cerebrovascular thrombosis (clot) or accident or a stroke. Sometimes blood vessel in the brain can burst resulting in long term effects.

According to National Heart, Lung and Blood Institute (2013) other types of heart disease also pose a risk to women. They include Coronary Microvascular Disease and Broken Heart Syndrome. These disorders which mainly affect women, are not well understood as coronary heart disease.

Signs and Symptoms of CVD

According to Fuca (2015) major symptoms suggestive of CVD include;

- **Angina:** A tightness or squeezing sensation in the chest indicating heart attack or chest pain that gets worse when lying down and doesn't worsen with exertion, is likely to be a pericarditis.
- **Leg Pain:** Peripheral artery disease often leads to cramping and fatigue in the legs with exertion

Signs Suggestive of Imminent Heart Attack include:

- Pale, clammy appearance
- Cyanosis (blue tinge to the skin) particularly in the extremities
- Rapid or shallow breathing
- Rapid and/or irregular heart beat

Risk Factors for Cardiovascular Disease

Extensive clinical and statistical studies have identified several risk factors that increase the risk of coronary heart disease, heart attack and stroke. These risk factors also increase the chance that existing coronary heart disease will worsen (NHLBI 2015). A person may not necessarily develop cardiovascular disease if he has a risk factor.

Modifiable Risk Factors

a. **Hypertension (high blood pressure).** This is by far the most important risk factor for CVD. High blood pressure can damage the artery walls and increase the risk of developing a blood clot. Normal blood pressure reading is below 130/90mmHg.

b. **Smoking:** Smoking and other tobacco use are also significant risk factors. The toxins (poison) in tobacco can damage and narrow the coronary arteries. On average smoking costs 13 years of life to a male smoker and 14years to a female smoker. Exposure to smoke – second hand smoking – increases the risk even in nonsmokers (UCSF 2015). Both active and passive smoking are implicated.

c. **High cholesterol in blood:** Cholesterol are fatty substances carried in the blood proteins. When the two combine they are called lipoprotein. There are harmful and protective lipoproteins known low density lipoproteins (LDL) and High

Density lipoprotein (HDL) or good proteins. Cholesterol causes the artery to narrow. 1/3 of Ischaemic heart disease is attributed to high cholesterol.

Gender Discrepancies in CVD Prevalence

According to Guameri, Oberg and StÖppler (2015), cardiovascular disease is the leading cause of death among women. However, women develop CVD on average about 10years later than men. It is thought that this difference is at least partially due to protective hormonal effects because women's risk catches up after menopause. Women who undergo early menopause either due to surgical removal of their ovaries or premature ovarian failure have similar rates of cardiovascular disease as age matched men. Researchers who study the gender differences in CVD often focus on the preventive role of estrogen. Estrogen has numerous effects on vascular tissue. It relaxes blood vessels lowering blood pressure (premenopausally). Estrogen blunts the effect of stress hormones (catecholamines) which are vasoactive and cause blood vessel constriction especially in times of stress. Estrogen is also a natural antioxidant. However, estrogen also promotes blood coagulation, which is not helpful. This is why women who use oral contraceptives are at an increased risk of thrombotic events (blood clots). Sex differences in clinical presentation, diagnosis and treatment outcome of cardiac disease have long been recognized. Since the mid-1980s the total number of deaths from CVD has been higher for women than men. A greater proportion of women (52%) than men (42%) with myocardial infarction die of sudden cardiac death before reaching hospital, perhaps in part because women tend to have non-specific prodromal symptoms rather than chest pain and these symptoms are recognized as being cardiac in origin. Even after acute myocardial infarction women are less likely to undergo coronary angiography than men (Nyugen, Berger, Duval & Luepker 2010).

In a study to assess the public knowledge of CVD and its risk factors in Kuwait reported by Awad and Al-Nafisi (2014), respondent's knowledge about types of CVD heart attack or stroke symptoms was low. Almost 60% of respondents did not know any type of CVD and coronary heart disease was the commonest type identified. Respondents knowledge regarding CVD was moderate. The commonest factors identified by over 4/5 of participants were smoking, obesity, unhealthy diet and physical inactivity. Akintunde, Akintunde and Opadijo (2015), carried out a study on knowledge of heart disease among workers in a Nigerian University, it was seen that only 19.9% of the study participants (which comprised of 206, with 96 males and101 females) were assessed to have good knowledge of heart disease risk factors. Most, (49%) had poor knowledge while (31.2%) had fair knowledge of heart disease risk factors.

Tedesco, Guiseppe, Napolitano and Angelillo (2015) carried out a study to assess the level of knowledge, attitude and reported behaviours regarding CVD by women in the general population in Italy. A cross sectional survey was conducted using structured interview and questionnaire among a random sample of 830 women older than 18 years from the general population. Findings showed that almost all the respondents (96.1%) reported having heard about CVD and among them respectively, 89.4% and 74.7% correctly identified smoking and high cholesterol level as risk factors for CVD while 46.3% and 31.5% indicated diabetes and familiarity. Overall, only 26.5% of the respondents were able to correctly identify the main CVD risk factors. Only 23% knew the main CVD preventive measures and this knowledge was significantly higher in women who are unemployed, who are non-educated, who have received information about CVD from physicians and who knew the main risk factors. Women with high school or not higher than middle school level of education compared with

those with a college degree or higher qualification were less knowledgeable. There was overall low level of knowledge of the CVD main risk factors and preventive actions.

Richard (2010) carried out a study on the relationship between cardiovascular disease (CVD) and awareness of risk factors among women in Bayelsa State. The purpose of the study was to determine how the awareness of risk factor especially hypertension and diabetes is related to cardiovascular disease. Standardized questionnaire items comprising of 20 questions were given to all women; additional questions about preventive behaviours/barriers were given. 200 women were selected for the study using stratified random sampling. Four research questions were answered in the study using mean, while Pearson product moment correlation was used to test the hypotheses. Survey research design was employed. From the analysis, younger women aged 40 years were less likely to be aware that hypertension and diabetes were among the causes of cardiovascular disease in women and were less likely to report of being very well informed about the risk factors, compared to older women aged above 55years. Awareness of heart attack signs such as shortness of breath (34%), nausea (15%), and fatigue (7%) was low among all women. Findings of the study also showed that knowledge of heart disease risk factor was low among women with diabetes and the pattern of cardiovascular was not significantly related to the awareness of is risk factors among the participants in this study. Much curiously is the fact that the level of education did not significantly relate with the level of knowledge of cardiovascular risk factors as many people with higher degrees including academic staff has limited knowledge about risk factors for cardiovascular disease in this study.

Methods

Research Design

The descriptive design of a cross sectional type was used for the study.

Area of Study

The study area was the entire Akwa Ibom State Secretariat Complex known as Idongesit Nkanga Secretariat.

Population of study

The population of 4803 female civil servants whose offices are located in the State secretariat complex, Uyo, was used for the study.

Sample and Sampling Technique

A total sample size of 406 respondents was selected for the study using stratified random sampling technique. Out of this number (406), 363 questionnaires were correctly filled in and returned.

Instrumentation

The main instrument used in this study was questionnaire.

Validity of the Instrument

The face and content validity of the instrument was ascertained by experts in test and measurements.

Reliability of the Instrument

In order to ensure the reliability of the instruments, split-half reliability test using Cronbach's statistical analysis to determine the consistency of the instrument. A reliability coefficient of 0.91 was obtained.

Method of Data Analysis

Analysis of the data was carried out using computer software programme called Statistical Package for Social Sciences (SPSS) version 20.0. The data was analyzed using inferential and descriptive statistics.

Result and Discussion

Result

Table 1:
Demographic Data of Respondents N = 363

S/N	Variable	Frequency	Percentage (%)
1.	**Age**		
	20-29	76	20.9
	30-39	140	38.6
	40-49	104	28.7
	50+	43	11.8
	Range: 20 – 67		
	Mean $\pm$ SD = 37.37 $\pm$ 9.34		
2.	**Marital Status:**		
	Single	150	41.3
	Married	190	52.3
	Divorced	7	1.9
	Widowed	16	4.4
3.	**Highest Educational Qualification:**		
	Primary	9	2.5
	Secondary	90	24.8
	Tertiary	264	72.7
4.	**Place of Residence:**		
	Rural	70	19.3
	Urban	293	80.7

Table 1 displayed the demographic data of the female civil servants in Uyo. Their age ranged from 20 -29 years with mean and standard deviation of 37.37$\pm$ 9.34 and modal age group of 30 -39 years. The women were either married (52.3%), single (41.3), widowed (16%) or divorced (7%).

In educational qualification, tertiary education was predominant (72.7%) followed by secondary (24.8%) and primary education is minimal (2.5%). Urban dwellers were 80.7% of the respondents while 19.3% were rural dwellers.

Research Question One

The research question sought to find out the level of awareness of the risk factors for cardiovascular disease (in particular stroke and heart attack) by the female civil servants in Uyo.

Table 2: Awareness of Risk factors for Cardiovascular Disease N = 363

Awareness of the risk factors for cardiovascular disease		Frequency	Percentage
Ever seen or heard of someone who has slumped and died or had a stroke	Yes	334	91.2
	No	32	8.8
Awareness of hypertension as risk factor of heart attack or stroke	Yes	346	95.3
	No	17	4.7
Awareness of weight gain and lack of exercise as risk factor of heart attack or stoke	Yes	317	87.3
	No	46	12.7
Awareness of high blood cholesterol as risk factor of heart attack or stroke	Yes	318	87.6
	No	45	12.4
Awareness of diabetes or high blood sugar as risk factor of heart attack or stroke	Yes	318	87.6
	No	45	12.4
Awareness of cigarette smoking as risk factor of heart attack or stroke	Yes	342	94.2
	No	21	5.8
Perception that heart attack is caused by evil spirits and not much of physical causes	*Yes	59	16.3
	No	304	83.7
Overall awareness	High (awareness score >50%)	354	97.5
	Low (awareness score $\leq$ 50%)	9	2.5

***implies wrong perception**

Table 2 displayed the women's awareness of risk factor of cardiovascular disease. Almost all have seen or heard of someone that slumped and died or had stroke (91.2%). Awareness of all the risk factors was high: hypertension (95.3%), cigarette smoking (94.2%), high blood cholesterol (87.6%), diabetes or high blood sugar (87.6%) and weight gain and lack of exercise (87.3%). The wrong perception that heart attack is caused by evil spirit and not much of physical causes was low (16.3%). In general, the women had very high awareness level of the risk factors for cardiovascular disease (97.5%).

Research Hypothesis

There is no significant relationship between the demographic variables (age and educational level) of the female civil servant in Uyo and their level of awareness of cardiovascular disease risk factors.

Table 3: Relationship between the demographic variables (age and educational level) of the female civil servant in Uyo and their level of awareness of cardiovascular disease risk factors. N = 363

Awareness of Risk Factors		Low	High	Total	p-value
Age	20-29 years	5(6.6)	71(93.4)	76(100.0)	.124
	30-39 years	2(1.4)	138(98.6)	140(100.0)	
	40-49 years	2(1.9)	102(98.1)	104(100.0)	
	50+ years	0(0.0)	43(100.0)	43(100.0)	
	Total	9(2.5)		363(100.0)	
Educational Level	Primary	0(0.0)	9(100.0)	9(100.0)	.395
	Secondary	4(4.4)	86(95.6)	90(100.0)	
	Tertiary	5(1.9)	259(98.1)	264(100.0)	
	Total	9(2.5)	354(97.5)	363(100.0)	

Fishers Exact Test was computed as Chi-Square Assumption (more than 20% of the frequency >5) was violated

Table 3 displayed the relationship between the demographic variables (age and educational level) of the respondents and awareness of risk factors for cardiovascular disease. For age, there was no significant relationship between age and awareness of risk factors for cardiovascular disease, p = .124. This implies that the awareness level for the different age groups was the same: 20-29 years (93.4%), 30-39 years (98.6%), 40-49 years (98.1%), 50+ years (100.0%). For educational level, there was likewise no significant relationship between educational level and awareness of risk factors for cardiovascular disease (p =.395). This implies that the awareness level was the same for the different educational levels: primary (100.0%), secondary (95.6%), tertiary (98.1%).

In Fishers Exact test, the smaller the value of p, the greater the evidence of rejecting the null hypothesis. The decision rule is to reject the null for each table to which Fishers test assigns a p-value equal to or smaller than 5% (0.05). in this finding, the p- values were higher than 0.05, therefore the null hypotheses were accepted.

Discussion of the Findings

The result of the study in table 3 explained the relationship between the demographic variables (age and educational level) of the female civil servant in Uyo and their level of awareness of risk factors for CVD. In analysis of the relationship, the Fishers Exact Test was used because more than 20% of the expected frequency was less than 5 (thus violating the chi-square assumption). A p-value of .124 was obtained in assessing the relationship of the respondent's age with the level of awareness. Also, for the level of educational and awareness of CVD risk, a p-value of .395 was obtained. In Fishers Exact Test, the smaller the value of p, the greater the evidence of rejecting the null hypothesis.

The null hypothesis is rejected for a Fishers Exact Test whose p-value is equal to or less than 0.05 (5%). Therefore, a p-value of .124 for age and .395 for educational level are greater than 0.05. Consequently, the null hypothesis is accepted. This means that there is no significant

statistical relationship between the demographic variables (age and educational level) of the female civil servant in Uyo and their level of awareness of cardiovascular disease risk factors. Findings show that the awareness level for the different age groups was the same meaning that the respondents level of awareness were not significantly influenced by their ages as shown by a p-value of .124 on the Fishers Exact Test.

This finding contradicts findings by Awad and Al Nafisi (2014) in their study to assess the public knowledge of CVD and its risk factors in Kuwait where he found in a multivariate logistic regression analysis that the age of respondents was one of the independent predictors for better level of CVD knowledge; he found that age 50-59 had a higher level of knowledge than others.

In the case of educational level, findings from the study showed that the awareness level was the same for the different educational levels. A p-value of .395 on the Fishers Exact Test for influence of education on awareness of CVD risk factors showed that there was no significant influence of education on awareness of CVD risk factors.

A similar surprising finding was reported by Richard (2010) in his study on the relationship between CVD and the awareness of risk factors among women in Bayelsa state. he found that the level of education did not significantly relate with the level of knowledge of CVD risk factors as many people with higher degrees had limited knowledge about risk factors of CVD. Akintunde, Akintude and Opadijo (2015) also had a similar discovery in their study in a university community. However, a contrary finding was reported by Tedesco, Guiseppe, Napolitano and Angelillo (2015) in their study on women in the general population in Italy. According to them, women with a high school or not higher than middle school level of education compared with those with a college degree or higher qualification were less knowledgeable of CVD risk factors.

Conclusion

Awareness of CVD has increased, although a significant gap between perceived and actual risk of CVD remains. Educational interventions to improve awareness and knowledge are needed, particularly for minority and younger women. Primary healthcare workers are very important in the screening of CVD risk factors in an opportunistic and systematic way and in providing consultancy on changing risky behaviours (hypertension, smoking, etc.). Therefore, it is of utmost importance that primary healthcare workers make interventions to reduce the risk level by determining the CVD risk. Therefore, the study reveals that there is no significant relationship between demographic variables of age and educational level of the respondents and the level of awareness of CVD risk factors.

Recommendation

Based on the findings of the study, following recommendations are made:

1. The role of health workers as information source in CVD awareness and screening should be increased.

2. Policy makers should establish policy guidelines that will enhance adequate and urgent dissemination of information about CVD to the women and general population of Akwa Ibom State.

3. Health education should be targeted to the general public and the women in particular through various media. Television and radio appear to be better

media to reach a wider audience but the benefit of the media may be limited in rural communities. It may be easier to reach a cross section of people through organizations built around a pre-existing community institutional framework like the church, age grade, women or men community meetings, etc. thus the community leaders must be contacted and thoroughly educated and encouraged to assist in information dissemination in the communities. The above strategy will help disabuse the minds of the populace of superstitious beliefs of 'ghost strikes' with respect to stroke and sudden death.

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