IJIRR

International Journal of Information Research and Review
Vol. 04, Issue, 04, pp.3977-3980, April, 2017

RESEARCH ARTICLE

KNOWLEDGE AND COMPLIANCE OF PATIENTS WITH ISCHEMIC HEART DISEASE'S FOR RISK FACTORS REDUCTION

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ARTICLE INFO

Article History:

Received 24th January, 2017
Received in revised form
16th February, 2017
Accepted 20th March, 2017
Published online 30th April, 2017

Keywords:

Patients,
Ischemic Heart Diseases,
Risk factors,
Knowledge and Compliance.

ABSTRACT

Background: Ischemic heart disease (IHD) is a commonest cause of death over the entire world. The objective of this study was to assess knowledge and compliance of participants for reduction of risk factors of ischemic heart disease.

Methods: A descriptive study was conducted at Sudan Heart Center (SHC), Khartoum. A convenience sampling technique was used for selection of 106 participants who have recently experienced ischemic heart disease and were excluded the most severe cases. Standardized administered questionnaire was used for data collection after pre-tested and an ethical approval was obtained from Institutional Review Board and an informed consent was obtained from each patient prior to interview. The collected data were analyzed using the Statistical Package for Social Sciences (SPSS), version 15.

Results: The study population was composed of 70% male and 30% female patients and most of them were elderly. The clinical history of participants revealed that 60% were hypertensive, 51% were smokers while 34% were diabetics. About 62% of the study population had poor knowledge about types and hazards of cholesterol, 57% of them showed poor compliance for reduction of cholesterol while 55% had poor knowledge of hypertension and 91% had poor compliance to follow better methods for control. Also 87% of subjects had poor knowledge about hazards of various types of smoking while 81% had poor compliance to cessation smoking. In addition to their poor knowledge about risk of obesity and inactivity while 68% didn't follow the ideal physical exercise to decrease their weight.

Conclusion: The participants had low level of knowledge and compliance regard reduction of ischemic heart disease risk factors.

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INTRODUCTION

Coronary artery disease is a common type of heart disease and important cause of death. The number of cases with ischemic heart disease (IHD) has increased among people in different parts of the world (Lewis, 2004). In 2008 there were 7,249,000 deaths from IHD, accounting for 12.7% of all global deaths. India and China together had over 2 million deaths or over 30% of the world's total. IHD burdens, a large numbers of deaths were also seen in the Russian Federation (659,000), and in USA (445,800) reflecting their large population sizes (Finegold Mortality from Ischaemic heart disease by country, 2013). Ischemic heart disease may also lead to "sudden" cardiac death; the cause of death for 250,000 in U.S. adults each year. In recent years, the dominance of chronic diseases as major contributors to total global mortality, the total number of cardiovascular disease deaths; mainly coronary heart disease, stroke, and rheumatic heart disease had increased globally to 17.5 million from 14.4 million in 1990. ; 7.6 million were attributed to coronary heart disease and 5.7 million to stroke. More than 80 percent of the deaths occurred in low and middle income countries. The World Health Organization (WHO) estimates there will be about 20 million CVD deaths in 2015 [3, 4]. It seems more patients in Sudan have been treated for ischemic heart disease in recent years (Bennett *et al*., 1996).

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There are multifactor, and a number of risk factors are known to predispose to IHD, such as age, gender, race and family history - cannot be changed, whereas other major risk factors; elevated serum lipids, hypertension, smoking, uses of tobacco, obesity, physicalinactivity. For cardiovascular risk reduction Knowledge of the predisposing risk factors is an important step in the modification of lifestyle behaviors conducive to optimal cardiovascular health in developing countries (Dergham Majeed Hameed, 2011; Molly Byrnea, 2005; Willichandetal, 2001). Epidemiologic studies pointed to several factors; that increased probability of IHD development. This study was focused on the major risk factors of ischemic heart disease which attacked the health and often led to fatal complications. People in Sudan generally tended to neglect such risk factors. Periodic assessment was rarely practiced unless people became ill; then they were diagnosed with hypertension, diabetes mellitus or other underlying risk factors. The overall objective of the study was to assess knowledge and compliance of participants for reduction ischemic heart disease's risk factors.

Justification

Cardiovascular diseases are the leading cause of death. In 2008, 30% of all global death is attributed to it. Also a higher of all global death over 80% in low- and middle-income countries and causes mass disability: within the coming decades the disability-adjusted life years (DALYs) estimate is expected to rise from a loss of 85 million DALYs globally in 2020, thereby remaining the leading somatic cause of loss of productivity (Guy De Backer, 2012).

It estimated that, by 2030, over 23 million people will die from cardiovascular diseases each year (Http://Www.Ccs.Ca/ Images/Guidelines/Guidelines_Pos_Library/Prev_Cc_1998.Pdf ; Kristen, 2009). At least three quarters of the world's deaths from CVDs occur in low- and middle-income countries. People in low- and middle-income countries often do not have the benefit of integrated primary health care programs for early detection and treatment of people with risk factors compared to people in high-income countries (WHO, 2015). According to the World Health Organization, policy and other environmental changes may bring about major reductions in CVD burden in all countries for less than $1 per person per year, whereas costs of individual counseling, drug, or surgical approaches are at least several-fold higher. The AHA Community Guide recommends interventions targeted at all the strata of the pyramid, with an emphasis on the second level, changing the context to make individuals' default decisions healthy (www.mayoclinic.org/healthy-lifestyle/stress-management/in-depth/stress-symptoms/art-20050987, 2016.).

MATERIALS AND METHODS

Study design: It was descriptive hospital based study design.

Study setting: It was conducted in Sudan Heart Center (SHC) at El Khartoum State. It is a center for basic care for cardiovascular problems in Sudan.

Study population: One hundred and six patients of IHD participated in the study.

Inclusion criteria: This study included patients with ischemic heart disease; their conditions were stable, both genders males and females, at middle and old age.

Exclusion criteria: The study was excluded young adult and unstable conditions due to ischemic heart diseases and patient who disagree to participate in the study.

Sampling and sample size: It was non-probability convenience sampling. The sample size was (106); included entire patients attended to the center during the study and fulfilled inclusion criteria.

Data collection tool: Data was collected using a standardized administered questionnaire after pre-tested, which was composed of 22 closed ended questions.

Data Collection Technique: All participants were interviewed using a pre-tested standardized administered questionnaire. Inactivity, stress and diabetes accelerate atherosclerosis Occupations with high stress index are known to have susceptibility for atherosclerosis. The European Society of Cardiology and the European Association for Cardiovascular Prevention and Rehabilitation have developed an interactive tool for prediction and managing the risk of heart attack and stroke in Europe. The heart score programmer was aimed to support clinicians to optimize individual.

Data analysis: The collected data were processed and analyzed using SPSS-version 15. Each question item had scoring from very poor to excellent modified based on multiple Likert scale (Thomas, 2015). The level of knowledge and compliance among the study population was scored as followed very poor, poor, good, very good and excellent. Levels of behavior change during stress measured according to the symptoms involve during anger. The scale was categorized into mild, moderate and severe level. At severe level the people couldn't control themselves anger and could harm them self and others, but moderate level; they are able to control them self. (Israel, 2003). An ethical clearance was obtained from the Institutional Review Board of Academy science and & Technology University, agreement from Heart center administrators as well an informed consent was obtained from each patient for participant before being interviewed.

RESULTS AND DISCUSSION:

This study was conducted at Sudan Heart Center; for assessment knowledge and compliance among patients who diagnosed with ischemic heart disease.Most of the study participants were male (70%). The M: F ratio in this study reflects the expected sex distribution of ischemic heart disease. Majority of them were elderly (mean of age 59 years+ SD ….) and hypertensive (60%); diabetes (34%) (Smoking (51%), lack of regular exercise (75%) and nervous mood (93.2%) male and 84.4% female. This agrees with expected age for ischemic heart disease and distribution of risk factors (Hjermann, 1983). A similar study was conducted to evaluate the risk factors for myocardial infarction in Taif region, kingdom Saudi Arabia were the presence of hypertension (59%), diabetes (35.9%), consuming a highly deep fried food (76.9%), lack of regular exercise (89.7%) and nervous mode (79.5%) and mean knowledge score of most patients recruited was low

(http://jama.jamanetwork.com/article.aspx?articleid=377969.). There is slightly variation between the two groups of study population in distribution of hypertension and diabetes and Sudanese population 25% performed regular exercise; but they were mild nervous than the study population in Taif region Saudi Arabia kingdom. The studied population knowledge about types and rich food with cholesterol was very poor, while their compliance to follow methods to control this problem was poor. As well as their knowledge about hypertension and compliance to follow methods to reduce high blood pressure was very poor (Fig.1, 2).

The majority of the studied population had very poor knowledge about the effect of negative smoking and compliance (Fig.1, 2). As well as their levels of knowledge about factors, that increase the body mass index, its hazard on their health and benefit of physical exercise were poor. On the other hand their ability to control these problems was very poor (Fig.1, 2) below. As similar as overall risk factors of ischemic heart disease was a worldwide problem (http://edis.ifas.ufl.edu).

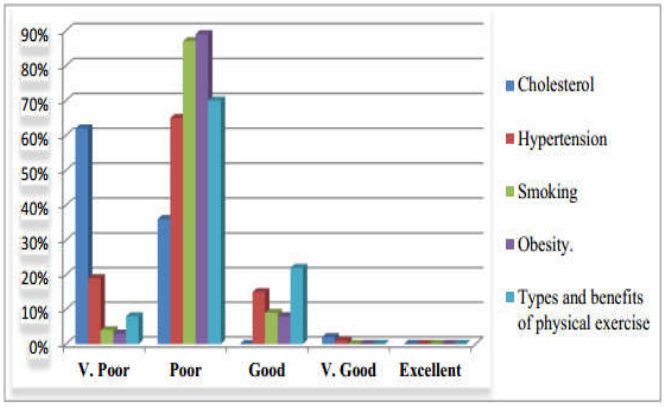

Figure 1. Level of knowledge of studied population about modifiable risk factors of ischemic heart disease: (n=106)

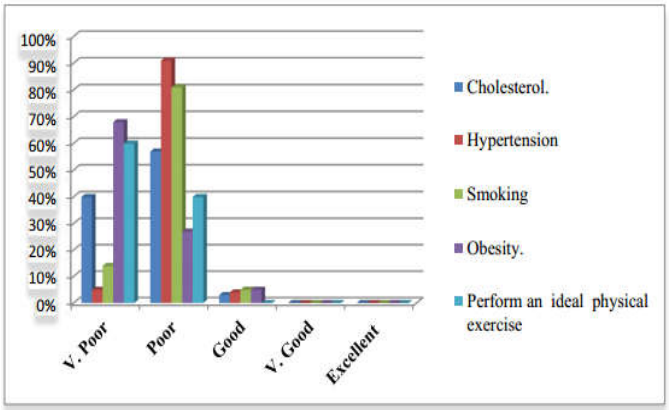

Figure 2. Level of compliance for modifiable risk factors of ischemic heart disease among studied population: (n=106)

A similar study was conducted in the United States and other high-income countries since 1960s to assess knowledge of risk factors before and after cardiac rehabilitation, the result showed that participants had poor levels of knowledge at start of the program (http://circ.ahajournals.org/ by guest on March 1, 2015.).

Table 1. Level of stress among studied population in relation to gender: (n=106)

Genders	Level of stress		
	Mild	Moderate	Severe
Male	0%	6.8%	93.2%
Female	0%	15.6%	84.4%

P value (0.004)

The study revealed that more than 90% of participants identified themselves as being under stress at home or works. Pearson's chi-square testwas used; there was a significantly difference between various categories of stress types among gender P value (0.004) as showed at (table 1). Almost seen in both males and females were more stressful. The method for assessing stress was based on the patient own perception and not on subjective criteria (table1); this agrees with previous study results, which confirmed that stress symptoms can affect the body organs; thoughts, feelings and behavior. Being able to recognize common stress symptoms can give a jump on managing them; stress can contribute to health problems, such as high blood pressure, heart disease, obesity and diabetes (http://edis.ifas.ufl.edu). Limitation of the study first it was neglected some other risk factors such as exposure to high quantities of alcohol, oral contraceptive pills and calcium deposition. Second limitation that participants were not questioned about factors that aggravate their stress ; but these our recommendation for future study to fill this gap.

Conclusion

This research article has clearly shown that the knowledge of most patients about risk factors of ischemic heart disease namely high cholesterol, hypertension, diabetes, smoking, and obesity, lack of exercise and stress and compliance with strategies to reduce the risk burden of these risk factors are universally low. It is important to introduce preventive program and cardiac rehabilitation to raise public knowledge and awareness' and encourage people to change their sedentary lifestyle.

Acknowledgements: We express our appreciation to all who advice or help for this work.

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