ISSN: 2230-9926

Available online at http://www.journalijdr.com

IJDR

International Journal of Development Research
Vol. 09, Issue, 07, pp. 28741-28745, July, 2019

RESEARCH ARTICLE **OPEN ACCESS**

RISK FACTORS FOR CORONARY ARTERY DISEASE: AN INTEGRATIVE REVIEW OF LITERATURE

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ARTICLE INFO

Article History:

Received 28th April, 2019
Received in revised form
17th May, 2019
Accepted 03rd June, 2019
Published online 28th July, 2019

Key Words:

Coronary heart disease,
Risk factors,
Cardiovascular diseases.

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ABSTRACT

Objective: to present a reflection about the risk factors that lead to the onset of coronary artery disease. **Method:** Descriptive and exploratory study, conducted through integrative review of literature. The survey was conducted in the month of March 2019, where he researched the following descriptors: risk factors; Coronary artery disease. The initial sample was of 69 articles, however, after the application of the exclusion criteria, obtained a sample of 15 articles where only 05 were considered for this review, by address in more depth the subject of this study. On identification of sources for location articles were consulted databases: Virtual Health Library; Latin American Caribbean system on health sciences information; Coordenação de Aperfeiçoamento de Pessoal de Nível Superior; Regional online information system for scholarly journals from Latin America, Caribbean, Spain and Portugal and Ibero-American Network of Scientific Publishing in nursing. **Results and Discussion:** Among the various diseases that contribute to the involvement of coronary artery disease diabetes and hypertension are diseases that has been excelling in recent years, being regarded as a worldwide epidemic, becoming a problem public health. **Conclusion:** the presentation of the data brings a warning about the need for the development of strategies for the prevention of diseases and for the early detection of risk factors for coronary artery disease.

Citation: ***Milene de Andrade Gouvêa Tyll, Everton Luís Freitas Wanzeler, Felipe Natan Verde Ferreira et al*, 2019.** "Fatores de risco para doença arterial coronariana: uma revisão integrativa de literatura", *International Journal of Development Research*, 09, (07), 28741-28745.

INTRODUCTION

Coronary artery disease (CAD) is characterized by insufficient blood supply to the heart via the coronary arteries on the obstruction of blood flow by atherosclerotic plaques. Cardiovascular diseases are the leading cause of death in the world. An estimated 17.5 million people died of cardiovascular diseases in 2012, accounting for 31% of all global deaths[1].According to the literature, between the risk factors (RF) for CAD include nine: heredity, sex, advanced age, hypertension, diabetes mellitus, Dyslipidemia (high total cholesterol levels, triglycerides, lipoproteins low-density, and low levels of high density lipoprotein), obesity (particularly excess abdominal fat), physical inactivity and smoking. It should be noted that heredity, gender and age are called constitutional risk factors, and others, would be behavioral risk factors. That is, can be eliminated or, at least, controlled[2,3].Diabetes Mellitus (DM) is a multifactorial metabolic disease, characterized by the increased rate of glucose in the blood and can be caused by insulin production by the pancreas or by the resistance of the body to this hormone[4,5]. Uncontrolled hyperglycemia leads to the appearance of many complications for the diabetic. The complications of DM are linked directly to vascular diseases, which are divided into: macrovasculares and microvascular. The main microvascular disease, retinopathy and nephropathy are: neuropathy.Among the macrovasculares, include coronary artery disease (CAD), cerebrovascular accident (AVE) and Peripheral Vascular disease (PVD)[5,6].

The increase in incidence of coronary artery disease (CAD) in the female population, especially in the climacteric period, is related to hormonal changes, and blood circulatory occurring in women. These changes are known to be involved in the genesis and progression of cardiovascular disease that, by your time, is the main cause of mortality among the middle-aged population[7,8].Between the various approaches to the treatment of coronary atherosclerosis, the control of risk factors should receive primary focus,[9,10,11-12]Once, through this measure, it is possible to postpone the beginning of the disease, as well as stabilize symptoms after your home.However, to minimize these risk factors, it is necessary to initially detect them[1].Although the risk factors for CAD are well defined, it turns out that this is a subject little discussed in brazilian scientific literature and in the undergraduate courses in the area of health. Because of this, there are doubts as to the technical principles, the conduct of health professionals and how to identify early those factors that cause the pathology addressed.In this perspective, the relevance of this study is related to the lack of publications to the risk factors for coronary artery disease and the possibility of providing important scientific grants to working professionals in emergency and for realization of this procedure safely and effectively.On the exposed, aroused interest on the following research question: what are the risk factors for coronary artery disease involvement? Therefore, this study aimed to present a reflection about the risk factors that lead to the onset of coronary artery disease.

MATERIALS AND METHODS

It is an integrative literature review study, developed with the aim of bringing together and synthesizing the results of other research on the risk factors for coronary artery disease, and thus contribute to the further developmentof knowledgeabout the topic investigated.The integrative review studies must be formulated in accordance with the following steps: preparation of a question to guide the study, followed by the establishment of objectives, selection criteria, definition of information to be collected, the selection of articles in databases, analysis and discussion of the findings and presentation of the review[33].So, as a first step of the study, formulated the following research question: what are the risk factors for coronary artery disease involvement?

The survey was conducted in the databases of the Virtual Health Library (BVS); Latin American Caribbean system on health sciences information (LILACS); Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES); Regional online information system for scholarly journals from Latin America, Caribbean, Spain and Portugal (LATINDEX) and the Iberoamerican Network Scientific Publishing in nursing(RED Edit).In this sense, for the lifting of the publications were used registered descriptors in health sciences descriptors (DeCS): “Risk factors”, “Artery”, “Coronary”, “Coronary Heart Disease”.For identification of research materials, the timeframe of 4 years, considering the period from 2015 to 2019;100 articles were found with the descriptor "factors", 46 articles with the descriptor "Risk", 98 articles with the descriptor,“Coronary”, 30 articles with the descriptor “Artery”, 100 articles with the descriptor "disease". (Figure1).

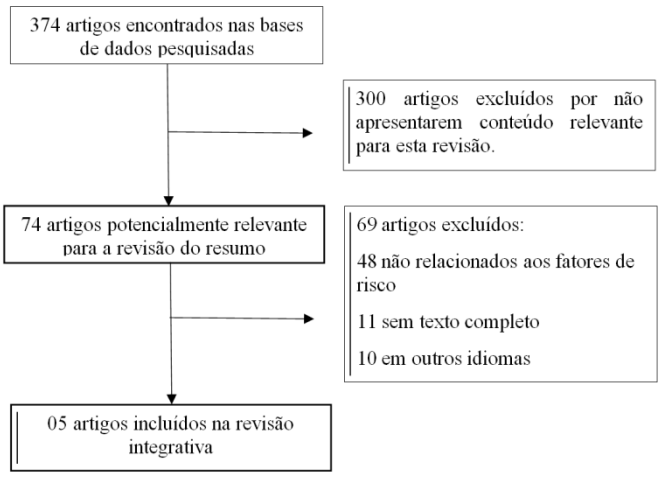

Figure 1.

In this way, 69 were selected abstracts of articles, after reading were elected 15 articles which addressed the subject proposal and, according to the purpose of the study, were selected 5 items left clear risk factors for arterial disease coronary artery. The survey was conducted in the month of March 2019. The inclusion criteria used for the selection of the articles analyzed were: full papers available in Portuguese language, which discussed the theme in question, published in the last five years (January 2015 to February 2019). The exclusion criteria adopted were: articles that do not contribute to answer the proposed question and texts in the form of editorials and letters to the editor, master's thesis, doctoral dissertation and incomplete articles in English or Spanish. After the procedure of electronic search in the databases mentioned above, an assessment of articles, in order to ensure that they met the criteria for inclusion. In this way, the publications were pre-screened based on reading the title and summary and then proceeded to read in full. The items found were organized According to the order of selection, and data were analyzed according to their contents, by means of descriptive statistics.

RESULTS

The initial sample was of 15 articles, however, after the application of the criteria laid down, a final sample of 5 articles, being in nursing Magazine 01 UFPE, 01 in the electronic journal health and Science, 01 in the journal of Faculty of science of Medicated Sorocaba; International Cardiovascular Sciences Journalof Magazine 01 and 01 Nursing Network Journal of the Northeast. To enable the display of selected scientific articles 05 for purposes of study, were organized according to the following variables: authors, purpose, title, and year of publication, as provided in Table 1, below:

Table 1. Characterization of the Articles Reviewed

Nº	Authors	Place and year of publication	Area of concentration	Indexed base
1	BARRETO DE CARVALHO *et al.*	Pernambuco, 2016	Nursing	BVS
2	MEIRA, Omar Oliveira *et al.,*	Minas Gerais, 2016	Health and Science	CAPS
3	SILVEIRA, Edvaldo Lima*et al.*	Sorocaba, 2018	Medical Sciences	LATINDEX
4	MELO, J. B. *et al.*	São Paulo, 2018	Cardiology	LILACS
5	POMPEO, Daniele Alcalá*et al.*	Fortaleza, 2017	Nursing	RED Edit

Table 2. Distribution of selected studies in database BVS; Scielo; LATINDEX; LILACS e REDELAYC According to title, authors, purpose and methodology

Nº	Title of article	Objective	Type of study
1	Prevalence of coronary artery disease in diabetic patients.	Identify the prevalence of diabetic patients with CAD served in a referral hospital for cardiovascular diseases in the city of Mossoró in the region West of the State of riogrande do norte (RN).	Documentary descriptive study with quantitative approach.
2	Primary diagnosis of coronary risk factors in teachers of the municipal public network of a city in the interior of Minas Gerais.	Determine prevalence of coronary risk factors in primary public school teachers the city of Piraúba-MG	Observationalcross-sectionalresearch
3	Prevalence and distribution of cardiovascular risk factors in patients with coronary artery disease in northern Brazil	Estimate the prevalence and distribution of combination of RF on portadoresde CAD, as well as assess the knowledge of personal history of risk.	Analytical and observational study
4	Cardiovascular risk factors in Weather Women with coronary artery disease	Identify cardiovascular risk factors among women with weather and without coronary artery disease.	Cross-sectional study and analytical
5	Self-esteem of patients with coronary artery disease	Evaluate the self-esteem of individuals with coronary artery disease	Cross-sectional study

The original articles included in this integrative review, it was found that they were all published in Portuguese language. Among the countries of origin of the studies, all were carried out in Brazil. As for the place of performance of the articles, 80% were produced in the Southeast, and published from the year 2016, with the largest number of publications in the year 2016 and 2018. On the type of publication, 20% of articles regarding Nursing as an area of concentration. With regard to the 20% objectives of articles had as objectives to identify the risk factors for coronary artery disease. In relation to methodology used 30% of articles would use the cross-sectional studies how the methodology best suited to the goals.

DISCUSSION

Major risk factors for the occurrence of corornariana artery disease: The coronary heart disease is generally degenerative changes in the intima, or inner lining of the arteries supplying the heart muscle damaged veins [31]. The initial study confirmed the importance of risk factors in the genesis of cardiovascular disease, characterized as prospective investigation of prevalence, incidence and precursors of CAD, was held in the town of Framinghan (USA) in 1948 [30].Such research has contributed substantially to the understanding of the causes of CAD, suggesting that it can be prevented by intervention in modifiable risk factors, such as high blood pressure, smoking, obesity and Dyslipidemia [30-32].Cardiovascular diseases are the leading cause of death in the world. An estimated 17.5 million people died of cardiovascular diseases in 2012, accounting for 31% of all global deaths[1]. Of these deaths, about 7.4 million were due to coronary artery disease CAD, considered the main cause of death in the world isolated [12-14].In Brazil, the cardiovascular diseases follow a similar pattern, configuring itself as the leading cause of death, [15-16]and the prevalence of coronary artery disease CAD in the adult population is estimated to be 5 to 8%. [16-1]. In the literature, they are classified into two modalities: modifiable factors, such as systemic arterial hypertension (SAH), hyperlipidaemia, smoking, sedentary lifestyle, obesity, diabetes mellitus (DM) and emotional stress; and nonmodifiable factors such as heredity, gender and age [12-18-11].In addition to the risk factors for cardiovascular diseases already mentioned, there are other underlying determinants of cardiovascular disease, such as urbanization and poverty [12-13].Between the various approaches to the treatment of coronary artery disease, the control of risk factors should receive primary focus, since, through this measure, it is possible to postpone the beginning of the disease, as well as stabilize symptoms after your home.[1-12-5-11-12].In recent decades, studies have shown that psychosocial factors play an important role in the morbidity and mortality of coronariopatias.However, despite frequent, these conditions are not recognised psychiatric and can persist for long periods, substantially impacting on quality of life of these patients and interfering with ability to self-care and to adapt to a new lifestyle[18-19-20].Furthermore, recent research shows evidence that anxiety and depression are independent causes for the development of cardiovascular diseases, highlighting that are as important as the other established risk factors in literature [19], like smoking, obesity and unhealthy living habits[18].Other aspects linked to mental health have also been cited in the literature as factors influencing the onset of these diseases, as for example: resilience, stress, personality disorders and negative emotions[21-22-23].Among the various diseases that contribute to the involvement of coronary artery disease diabetes and

hypertension are diseases that has been excelling in recent years, being regarded as a worldwide epidemic, becoming a problem public health [6]. In 2011, were confirmed 366 million cases of diabetes, representing 8.3% of the adult population worldwide, and estimates indicate that, in 2030, this number will grow to 552 million, equivalent to 9.9% of adults around the world[28-6].Within the aggravations of uncontrolled hyperglycemia diabetes leads to the appearance of many complications for the diabetic. Hypertension is in 20% to 60% of diabetics showing that it is three times more prevalent in diabetics when compared to non-diabetics, besides hypertension is considered as an important risk factor for the development of cardiovascular complications[25-6]. The main complaint more prevalent among patients is about precordial pain, present in 80 cases (41.24%). Precordial pain is directly related to the characteristic symptoms of coronary artery disease being the most common clinical presentation of myocardial ischemia[6].In diabetic patients with CAD and elderly care, and complaints like discomfort, indigestion, epigastric pain and sweating can also be present without being accompanied by chest pain. In patients with CAD, identified the main complaint, it is necessary to carry out some routine tests and to confirm the specific diagnostic hypothesis [26-6-27].

In addition, patients with low risk, according to the Electrocardiogram and clinical aspects, and that present normal biochemical markers should perform exercise testing after 9 hours, ideally up to 12 hours[6].The clinical treatment is based on administration of drugs such as antiplatelet agents, beta-blockers, statins and inhibitors of angiotensin converting enzyme, by the adoption of changes in life habits[27].Such measures result in clinical benefits and prevent the occurrence of acute coronary events.Meira et al[29]in your study suggests that the sex factor is determinant for the protection against coronary risk due to the action of the hormones estrogen and progesterone, which act to promote vasodilation via endothelium and protecting against the action of atherosclerotic plaque.Compared to the study of Lorenzi[4] and Melo[8]where there is an increase in the incidence of coronary artery disease CAD in the female population, especially in the climacteric period, this fact is related to hormonal changes, and blood circulatory that occur in women. These changes are known to be involved in the genesis and progression of cardiovascular disease that, by your time, is the main cause of mortality among the middle-aged population [4].

Conclusion

It was possible, through this study, estimate which of the most frequent risk factors for developing coronary artery disease. Sedentariness was found most frequently, followed by Hypertension, Dyslipidemia, obesity, DM, smoking, consumption of alcohol and food low in fruits and vegetables. Much has been advanced, in terms of public health in the country, through increasingly effective tracking of chronic degenerative diseases such as hypertension and DM, standardizing actions at the national level. The risk factors for coronary artery disease have an effect potentiated in the development of cardiovascular problems, so the control of these modifiable risk factors should be prioritized for diabetic's hypertensive patients and health professionals in the prevention of cardiovascular events, which enables the reduction of morbidity and mortality and improves the quality of life of these patients with high risk for CAD. In short, our results are indicative of the need for special attention of health care professionals, in relation to the identification and early intervention in RF present in individuals with a family history of CAD.Another point to be clarified is about the inappropriate lifestyle associated with socio-demographic factors and Comorbidities that already exist demonstrating the need for health education also for those convivial family. Therefore, it is believed that this study may propose a clear reflection about the major risk factors for coronary artérial disease already discussed by other test and which are of extreme importance to introduction of healthy habits and to block such factors that cause the onset of CAD.

Thanks: Our teacher Advisor, Msc. Milene de Andrade GouvêaTyll, the great teachings, incentive, availability, support and patience that had us in the course of this study.

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