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Asian Indians and Premature Heart Disease: A Systematic Review

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Asian Indians are part of a larger subgroup of Asians known as South Asians, who trace their origin by birth or by ancestry to India. Although heart disease is a global problem, among Asian Indians (AI) it occurs prematurely and is dramatically more pronounced. This population has been reported to have the highest risk of heart disease in the world, with heart attacks commonly occurring during the fifth decade of life and a substantial number of occurrences as young as 40 years of age. They exhibit few, if any traditional risk factors such as hyperlipidemia, metabolic syndrome, HTN, and diabetes. The rate of heart disease among Asian Indians is four-fold higher than Americans, with the first attack often occurring before the 40th birthday. The main objective of this systematic review is to locate, appraise, and examine the best available evidence for identification of the risk factors of heart disease in the Asian Indian population.

Search strategy

A three-step literature search for studies in English language from 2000 to 2011 was conducted utilizing (a) a primary search of Medline, CINAHL, Cochrane Central Register of Controlled Trials and Joanna Briggs registered titles, (b) a secondary search of non-indexed databases, and (c) a search of the grey literature. In addition, a manual review of the reference lists of all identified reports and articles was performed to identify additional studies.

Inclusion criteria

This review included studies with AI participants who traced their origin to the country of India and who were 18 years or older. Only quantitative evidence that investigated the risk factors for heart disease among AI was evaluated.

Each of the eligible articles was reviewed by two independent reviewers. Disagreements between the reviewers were resolved through discussion, or with a third reviewer. Studies that met the inclusion criteria were assessed for methodological quality using the JBI standardized critical appraisal tools. Data extraction was undertaken using the standardized data extraction tool from JBI-MAStARI.

Main results

The search strategy identified 100 articles in the published and unpublished literature that met the inclusion criteria. Of these 45 studies were included after critical appraisal and 55 were excluded, 14 studies were case control, 13 were comparable cohort, 18 descriptive studies met the inclusion criteria representing 39, 945 AI included in the final review.

Conclusions:

The review identified the modifiable, non-modifiable and emerging risk factors for CAD in AI population.

Title:

Asian Indians and Premature Heart Disease: A Systematic Review

Keywords:

Asian Indians, South Asians and heart disease

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Abstract Summary:

This systematic review aims to locate, appraise, and examine the best available evidence for identification of the risk factors of heart disease in the Asian Indian population.

Content Outline:

Introduction

A. Asian Indians are part of a larger subgroup of Asians known as South Asians, who trace their origin by birth or by ancestry to India. The term Asian Indian is also widely used to describe people from the Indian subcontinent which includes the countries namely India, Bangladesh, Pakistan, and Sri Lanka. The term "Asian Indian" is widely interchangeable with the terms Indian, South Asian, Indo-Asian, Indo- American, and Indian-American. The term excludes Native Americans and American Indians.

Asian Indians living in India and abroad have the highest morbidity and mortality rates from CAD. According to the World Health Organization, by the year 2020, one in four cardiac patients in the world will be an Asian Indian, with deaths exceeding 2.4 million annually. These reported high rates are surprising, considering that many Asian Indians practice vegetarianism, have lower smoking rates. Researchers have posited that the risk is even higher because genetics coupled with environmental factors such as poor dietary practices and decrease physical activity may account for such high rates. As evidenced by the children and the grandchildren of Indian immigrants to the United States, who adopt a Western life style of limited amounts of exercise and consumption of fast foods .

II. Body

A. This review considered studies that investigated the risk of CAD among Asian Indians. This included modifiable risk factors, non-modifiable risk factors and emerging risk factors. Non-modifiable risk factors were those factors that individuals have no control of such as genetics, age, gender, family history, and ethnicity. Modifiable risk factors were those that can be controlled by lifestyle modifications and or medications, which include lifestyle and behavioral risk factors that increase their risk for CAD, such as smoking, hypertension, hyperlipidemia, diabetes and obesity. Emerging risk factors were those that are new unique factors that increase Asian Indian's susceptibility to CAD and include elevated lipoprotein (a), fibrinogen, homocysteine, C-reactive protein, and elevated triglycerides.

B. The outcomes of interest that were considered included the prevalence of modifiable risk factors such as the environmental risk factors affecting AI such as alcohol intake, smoking, dietary practices, lack of exercise and migration. It also included the traditional risk factors affecting AI such as hyperlipidemia, metabolic syndrome, hypertension, and diabetes.

The prevalence of non-modifiable risk factors such as age, family history, and genetics. The prevalence of emerging risk factors such as elevated lipoprotein (a), fibrinogen, homocysteine, and C-reactive protein.

C. The systematic review included only quantitative studies that reported on the risk factor of CAD among AI. Since this review focused on the risk factors, there were no randomized controlled trials (RCTs). Therefore, the review considered observational design (cohort, case-control), and descriptive studies (surveys, epidemiological studies). The review excluded non-research based text such as reports, expert opinion papers, narratives, commentaries.

C. A total of 723 studies were retrieved from initial search that included the following databases: Academic Search Premiere n = 57, Pub Med n = 84, CINAHL n = 14, Medline n = 234, Science Direct n = 251, Biomed Central n = 22 and Google Scholar n = 15. Of these 135 were excluded after review of title. There were 588 potentially relevant studies identified resulted from the search strategy, but 308 articles were excluded after evaluation of abstract. There were 280 abstracts retrieved for examination; of these 119 were excluded after reviewing abstract. There were 161 articles selected for full paper retrieval to undergo further detailed examination, but after a full review 61 papers were excluded. A total of 100 papers were selected to assess the quality of methodological quality and for inclusion or exclusion in the review. A total of 55 studies were excluded for reasons such as incongruence to the review objectives, intervention and outcomes, not meeting the methodological quality criteria required for this review.

D. The search strategy identified 100 articles in the published and unpublished literature that met the inclusion criteria. Of these 45 studies were included after critical appraisal and 55 were excluded, 14 studies were case control, 13 were comparable cohort, 18 descriptive studies met the inclusion criteria representing 39, 945 AI included in the final review.

III. Conclusion

The review identified the modifiable, non-modifiable and emerging risk factors for CAD in AI population.

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study was conducted as a capstone project for DNP completion in UMDNJ. She completed Doctor of Nurse Practice in 2011.