Publisher
MEDRESEARCH
www.medresearch.in

Public Health Review - International Journal of Public Health Research

2017 Volume 4 Number 4 July-September

E-ISSN:2349-4166
P-ISSN:2349-4158

Research Article

Disease

Social determinants of cardiovascular disease and community based surveillance

Shins M.[1*], Basheer M.[2], Babu A.[3]

DOI: https://doi.org/10.17511/ijphr.2017.i4.01

[1*] Shins M., Department of Pharmacy Practice, KMCT Medical College, Calicut, Kerala, India.

[2] Mohammed Basheer, Department of Pharmacology, KMCT Medical College, Calicut, Kerala, India.

[3] A. Anil Babu, Department of Pharmacy Practice, KMCT Medical College, Calicut, Kerala, India.

Cardiovascular disease is one of the leading causes of death worldwide. CVD accounts for 17.3 million deaths globally each year and this figure is expected to grow year by year. Therefore surveillance is must for preventing and minimizing CVD. When implementing the interventions, we should also take in account of the social determinants related on CVD and also the traditional risk factors.

Keywords: Cardiovascular disease, Community Surveillance, Social determinants of health

Corresponding Author

Shins M., , Department of Pharmacy Practice, KMCT Medical College, Calicut, Kerala, India.
Email:

How to Cite this Article

Shins M, Basheer M, Babu AA. Social determinants of cardiovascular disease and community based surveillance. Public Health Rev Int J Public Health Res. 2017;4(4):71-74.
Available From
https://publichealth.medresearch.in/index.php/ijphr/article/view/68

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Manuscript Received	Review Round 1	Review Round 2	Review Round 3	Accepted
2017-08-05	2017-08-15	2017-08-24		2017-09-01

Conflict of Interest	Funding	Ethical Approval	Plagiarism X-checker	Note
No	Nil	Yes	7%	

Introduction

Now a day's chronic diseases act as an major contributed to total global mortality. Cardiovascular disease (CVD) contribute to this chronic diseases and has increase globally to 17.5 million in 2005, of this7.6 million were attributed to coronary artery disease (CAD) and 5.7 million stroke. WHO says that more than 80% of CVD death occurs in low and middle income countries [1].

The magnitude of increased in the prevalence of various cardiovascular risk factors as lead researchers to study the cause of risk factors which include smoking, alcoholism, gender, age, socio-economic status, and diseases.

Despite substantial social class disparities in cardiovascular disease mortality and risk factor prevalence, there are few reports on the feasibility and impact of community based, primary prevention programs targeted specifically to low income populations.

The community people experience various pressing social problems like drug and alcohol abuse which are perceived to be greater risk for developing CVD. The community based CVD study programs have specifically targeted populations of socioeconomic status [2,3].

Among a few established CVD modifiable risk factors, hypertension accounts nearly 70% of the CVD burden in the Asian- Pacific region although in reality, hypertension usually clusters with other CVD risk factors [4]. Occupational stress and obesity are very prevalent in low economic communities and emergency workers. Males are more prone to CVD than females due to tobacco consumption and alcoholism.

Environment exposure contribute to a under appreciate risk factor in development and severity of cardiovascular disease. It has been found that population in highly polluted area is associated with cardiovascular events and major adverse cardiac event (MACE) [5].

Methods and Materials

A detailed scientific review of literature was done by using IDIS (Iowa Drug Information Service), PubMed, Micromedex and other online databases were performed to optimise the social determinants of cardiovascular disease and community based surveillance.

Various articles were collected based on the topic, screened for relevant information and reviewed for a period of three months. This study aimed that what are the social determinants that lead to the progression of the cardiovascular diseases and how to minimize them by modifying the social habits as well as the life style.

In the study, we emphasis on the priority of community based surveillance, and for this purpose we go through many relevant articles related to the topic. The collected articles subjected to detailed analysis, from which assess the main social determinants that affects the cardiovascular diseases and also the related co morbidities.

The community based assessment of cardiovascular disease is important to check the progression of disease in economically backward peoples. Here the social determinants of cardiovascular disease include the physical factors, psychological factors and also the economical balance of the community. The community based surveillance in the ethnic group can give idea about the factors, and the relationship between the factors and cardiovascular disease.

Some of the studies shows Asians are more prone to the Cardiovascular disease, explained by degree of atherosclerosis. The risk factors also includes hypertension, Obesity, smoking, other metabolic disorders, etc The minimization of the risk as well as the prevention of the cardiovascular disease can be attained by the lifestyle modification or following treatment as per the relevant guidelines .

The need of community based surveillance of cardiovascular disease and risk factors- The concept of public health surveillance consist of on-going systematic collection, analysis and interpretation of collected or studied health data which play vital role in planning , evaluating, and implementing public health activities.

It mainly comprises of continues or repeated surveys of representative samples in a community. The need of CVD surveillance arises from the demographic changes which have been accompanied by a risk transition. In the case of public health population measurements are used to describe a specific disease other than a individual.

CVD surveillance involves a lot of human and financial resources for its sustainability. During surveillance risk factors act as a major tool in determining the severity of CVD.

It is now established that a group of major risk factors which involves tobacco, alcohol, inappropriate diet, physical inactivity obesity, hypertension, diabetes and dyslipidemia, governs the occurrence of CVD much before these are firmly established as disease.

Surveillance can be targeted to an inter population, whether at high risk, low risk, and special settings. At local levels surveillance helps the public health authority to study the trends, risk factors and impact of intervention in cardiovascular disease, which in turn helps in health programme development and monitoring [6].

Social determinants of cardiovascular diseases in the community: Social determinant of health can be defined as social condition in which a subject live and work. The study on social determinant of health is intended not only to prove its impact of social context on health, but also the mechanism in which this determinants act on health.

Social determinants on health conditions are physical, economic, social and psychological or personal resource. An individual has available to them for meeting their needs and adapting to that particular environment.

When it comes to cardiovascular diseases it is quite clear that thedisease is not only related to physical and chemical environment but also to the social and economic one. In fact the vast majority of studies in to the link between health and psychological l factors have been carried out in relation to cardiovascular diseases [1].

The key factor include working condition, jobs, social relationship, geographic environment and ethnicity. It has been found that psychological stress linked to the development of CVD risk like Hypertension, physical inactivity, and atherosclerosis. Self perceived stress as well as stress related measures have also been associated with CVD lie stroke.

Even though psychosocial factors accounts for the development of cardiovascular disease, this alone cannot be take into consideration. These are explained by traditional risk factors like obesity, smoking, heavy alcoholic consumption, unhealthy diet, and physical inactivity [8].

Socioeconomic status and heart disease: Socioeconomic status (SES) includes education, income and occupation of a specific individual or a population.

Studies shows that SES are associated with coronary heart disease(CHD), risk factors , morbidity , and mortality According to occupational status retired man, housewife, were in high risk of CHD than rest of people. Studies also suggest that people living in urban area, and people living in apartment were higher risk of developing cardiovascular disease (CVD) [9].

To stop a disease progression and its consequences for patients, the subjects, family and also to the wider community. It is suggested to better the SES phenomenon behind the prevalence of cardiovascular disease in local cities. The incidence rate can be decreased by planning, community based surveillance, introducing intervention programme and patient education [8].

Currently there is an international policy to improve national health monitoring system. In particular this policies have aided researchers and health care professional to study risk factors such as smoking and physical activity level [10].

Assessment of cardiovascular health and risk in ethnic group: Recent studies concludes there are differences in conventional and novel risk factors between groups, the risk factors and degree of atherosclerosis explains CVD, are most common among South Asians. But this factors cannot be taken as a final conclusion for the ethnic diversity in CVD. They increase the risk of cardiovascular risk of factors effecting platelet rupture, their socioeconomic factors and other idiopathic factors [11]. Some of the research suggest that incident resistance underlies then high coronary risk in South Asian peoples and strengthen the increase diet of coronary artery disease in South Asian population [12].

Psychological factors and cardio vascular disease: The association of cardiovascular disease and psychological factors is not fully known till now. It has been said that depression, anger, hostility, anxiety and other negative emotional factors have been significantly associated with increased risk of cardiovascular morbidity and mortality. To monitor patients emotional status interventional steps like questionnaires and patient counselling on a community basis must be given [13].

Traditional risk factors of cardiovascular diseases: Even though psychosocial factors accounts for the development of cardiovascular disease, this alone can not be take into consideration.

In factors like smoking and obesity varies considerably between studies and countries. Hypertension is a established risk factor in developing cardiovascular disease. Formal studies indicate hypertension is associated with high shear stress and vascular damage.

Smoking has been found to accelerated atherosclerotic plaque formation exercise tolerance among CVD patients. It is worth debating whether combines to increase public awareness and information pass on by practitioner should be clearly based on biomedical evidence, and at what extend it should be adapted to socio cultural settings [14].

Risk minimization and prevention of developing CVDS: Many countries were CHD is on rose having considered counselling and educational methods to encourage the people to reduce their risk for developing heart disease. A study lasting between six months and 12 year were conducted in different countries for a time periods of 4 decades.

The study suggested that intervention results in small reduction in risk factors which includes blood pressure, inactivity, Cholesterol, and smoking. But this small reduction in risk factors did not show any impact on the risk of cardiovascular risk in mortality or morbidity. Thus a different approach is needed as an intervention to reduce CVD among different countries particularly in developing countries.

Primary prevention decreases the risk of myocardial infarction (MI) and congestive heart failure. This primary preventions decrease the need for coronary revascularization, which includes CABG, PTCA, etc. this can in turn extents to improve quality of the population.

The American College of Cardiology (ACA) and American Heart Association (AHA) 2013 derives a new score to estimate the ten year of risk of developing first atherosclerotic cardiac vascular disease (ASCVD), which is explained as nonfatal MI, Coronary heart disease death (CHD), or fatal or non fatal stroke over a time period of ten years, in individual prove where initially free from ASCVD. The ACA/AHA guideline (2013) indicates that for patient's age 20-79 years who do not have existing clinical ASCVD assess for clinical risk factors every 4-6 years.

Regardless of the patients age clinician should communicate data of the patient and refers to the AHA/ACC life style guideline whish covered diet and physical activity [15].

Conclusion

In this review we conclude that, when we assess incidence of cardiovascular disease apart from the traditional risk factors social determinants like psychosocial factors ethnic factors, life style should be also taken into consideration. The burden of cardiovascular disease is increasing year by year most in developing countries, and it is known that reduction of risk factors does not produce a greater reduction in cardiovascular morbidity and mortality. The needful interventions and surveillance should be conducted in a systematic way to reduce cardiovascular disease.

Acknowledgement

This review article is a part of my academic project. I thank to **Dr. Anil Babu A**, Dept. of Pharmacy practice for his thoughtful comments on it and preparation of the manuscript.

Abbreviations

CVD – Cardiovascular disease, AHA – American Heart Association

Reference

01. Kaplan GA, Keil JE. Socioeconomic factors and cardiovascular disease- a review of the literature. Circulation. 1993;88;1973-1998. [Crossref]

02. Winkleby MA, Fortmann SP, Barrett DC. Social class disparities in risk factors for disease-eight-year prevalence patterns by level of education. Preventive medicine. 1990;1;19(1)1-2. [Crossref]

03. Brownson RC, Smith CA, Pratt M, Mack NE, Jackson-Thompson J, Dean CG, Dabney S, Wilkerson JC. Preventing cardiovascular disease through community-based risk reduction- the Bootheel Heart Health Project. American Journal of Public Health. 1996;86(2)206-13. [Crossref]

04. Martiniuk AL, Lee CM, Lawes CM, Ueshima H, Suh L, Lam TH, Gu D, Feigin V, Jamrozik K, Ohkubo T, et al. Hypertension- its prevalence and population – attributable fraction for mor tality from cardiovascular disease in the Asia-Pacific region. J Hypertens. 2007;25;1;73-9. [Crossref]

05. Gu D, Gupta A, Muntner P, Hu S, Duan X, Chen J, Reynolds RF, Whelton PK, He J. Prevalence of cardiovascular disease risk factor clustering among the adult population of China. Circulation. 2005;2;112(5)658-65.
[Crossref]

06. Nguyen QN, Pham ST, Do LD, Nguyen VL, Wall S, Weinehall L, Bonita R, Byass P. Cardiovascular disease risk factor patterns and their implications for intervention strategies in Vietnam. International journal of hypertension. 2012;4;2012.
[Crossref]

07. Kreatsoulas C, Anand SS. The impact of social determinants on cardiovascular disease. Canadian Journal of Cardiology. 2010;1;26;8C-13C.
[Crossref]

08. Moran A, Forouzanfar M, Sampson U, Chugh S, Feigin V, Mensah G. The epidemiology of cardiovascular diseases in sub-Saharan Africa-the global burden of diseases, injuries and risk factors 2010 study. Progress in cardiovascular diseases. 2013;31;56(3)234-9.
[Crossref]

09. Krishnan MN. Coronary heart disease and risk factors in India–On the brink of an epidemic?. indian heart journal. 2012;64(4)364.
[Crossref]

10. McKeigue PM, Ferrie JE, Pierpoint T, Marmot MG. Association of early-onset coronary heart disease in South Asian men with glucose intolerance and hyperinsulinemia. Circulation. 1993;1;87(1)152-61.
[Crossref]

11. McKeigue PM, Ferrie JE, Pierpoint T, Marmot MG, Janati A, Matlabi H, et al. Socioeconomic Status and Coronary Heart Disease. Health Promotion Perspectives. 2011;1(2)1-105.
[Article] [Crossref]

12. Adam LJ, Alvarez M, Carlos J, Rodriguez. Ethnic Minorities and Coronary Heart Disease- an Update and Future Directions. HHS Public Access. 2016;18(2)9.
[Article] [Crossref]

13. Detels R, Gulliford M, AbdoolKQ, ChorhChuan Tan. Epidemiology and prevention of cardiovascular disease. Oxford University Press. 2015.
[Article] [Crossref]

14. Cosselman KE, Navas-Acien A, Kaufman JD. Environmental factors in cardiovascular disease. Nature cardiology. 2015.
[Article] [Crossref]

15. Leigh JA, Alvarez M, Rodriguez CJ. Ethnic minorities and coronary heart disease- an update and future directions. Current atherosclerosis reports. 2016;1;18(2)9.
[Crossref]