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ORIGINAL RESEARCH

Assessment of risk factors for cardiovascular diseases among patients of known population

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ABSTRACT

Background: Cardiovascular disease (CVD) is increasingly recognized as a predominant contributor to morbidity, mortality, and disability on a global scale, representing a significant public health challenge. Hence; the present study was conducted for assessing risk factors for cardiovascular diseases among patients of known population. **Materials & methods:** A total of 500 patients who came for routine medical checkup were enrolled. Complete demographic and clinical details of all the patients was obtained. Information on medical condition and lifestyle risk factors for hypertension and coronary heart diseases were collected using a structured questionnaire. Blood samples were collected from each patient and analyzed to detect and quantify important biomarkers. A Questionnaire was framed and habit history (if any) was recorded. All the results were recorded in Microsoft excel sheet and was subjected to statistical analysis using SPSS software. **Results:** A total of 500 subjects were screened during the study period. Mean age of the patients was 53.9 years. Majority proportion of patients belonged to the age group of more than 50 years. 63.8 percent of the patients were males. 17.2 percent of the patients were illiterate. 30.2 percent of the patients were educated upto graduation while 17.8 percent of the patients were educated upto postgraduation. Positive family history of cardiovascular disease was seen in 64.2 percent of the patients while dyslipidemia and diabetes were seen in 63.8 percent and 60.8 percent of the patients respectively. Hypertension was seen in 67.6 percent of the patients. Obesity and sedentary life style was seen in 73 percent and 79.6 percent of the patients respectively. **Conclusion:** The efficacy of intervention programs aimed at preventing cardiovascular disease in populations within developing nations warrants further investigation, with particular emphasis on the needs and health outcomes of women.

Key words: Cardiovascular, Hypertension

INTRODUCTION

Cardiovascular disease (CVD) is increasingly recognized as a predominant contributor to morbidity, mortality, and disability on a global scale, representing a significant public health challenge. It accounts for approximately one-third of all deaths worldwide and is responsible for 10% of total disability-adjusted life years (DALYs) lost.[1] Historically, the prevalence of cardiovascular disease has been more pronounced in industrialized, high-income nations. However, the overall burden of CVD is now disproportionately higher in developing countries. As a result, these nations are projected to face the most substantial burden of cardiovascular disease in the coming years. The association between CVD and various risk factors—including hypertension, elevated cholesterol levels, obesity, tobacco use, diabetes, and sedentary lifestyles—has been well established. To mitigate the disease burden linked to CVD, extensive research has been conducted on these risk factors, particularly in developed countries.[2, 3]

The relationship between cardiovascular disease (CVD) and diabetes mellitus (DM) is characterized by a gradient, with the degree of this gradient influenced by a variety of risk factors. A significant portion of the elevated CVD risk in individuals with DM is linked to a higher occurrence of established risk factors, including hypertension, dyslipidemia, and obesity. Recent research over the past ten years has underscored the critical importance of managing these known risk factors in diabetic patients to mitigate CVD risks. Despite this, inadequate management of cardiovascular risk factors remains prevalent within

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the diabetic population. It is essential to recognize that the increased CVD risk in individuals with DM cannot be solely explained by the higher rates of these established risk factors. Consequently, it is plausible that additional risk factors play a significant role in this demographic. The metabolic syndrome (MtS) encompasses a cluster of interconnected risk factors, such as hypertension, hyperglycemia, abdominal obesity, and dyslipidemia.[4- 7]Hence; the present study was conducted for assessing risk factors for cardiovascular diseases among patients of known population.

MATERIALS & METHODS

The present study was conducted for assessing risk factors for cardiovascular diseases among patients of known population. A total of 500 patients who came for routine medical checkup were enrolled. Complete demographic and clinical details of all the patients was obtained. Information on medical condition and lifestyle risk factors for hypertension and coronary heart diseases were collected using a structured questionnaire. Blood samples were collected from each patient and analyzed to detect and quantify important biomarkers. A Questionnaire was framed and habit history (if any) was recorded. All the results were recorded in Microsoft excel sheet and was subjected to statistical analysis using SPSS software. Univariate analysis was done for evaluation of level of significance. P-value of less than 0.05 was taken as significant.

RESULTS

A total of 500 subjects were screened during the study period. Mean age of the patients was 53.9 years. Majority proportion of patients belonged to the age group of more than 50 years. 63.8 percent of the patients were males. 17.2 percent of the patients were illiterate. 30.2 percent of the patients were educated upto graduation while 17.8 percent of the patients were educated upto postgraduation. Positive family history of cardiovascular disease was seen in 64.2 percent of the patients while dyslipidemia and diabetes were seen in 63.8 percent and 60.8 percent of the patients respectively. Hypertension was seen in 67.6 percent of the patients. Obesity and sedentary life style was seen in 73 percent and 79.6 percent of the patients respectively.

Table 1: Demographic data

Variable		Number	Total
Age group	Less than 50	144	28.8
	More than or equal to 50	356	71.2
Gender	Males	329	63.8
	Females	171	36.2
Educational qualification	Illiterate	86	17.2
	Upto primary	66	13.2
	Upto secondary	108	21.6
	Graduation	151	30.2
	Postgraduation	89	17.8

Table 2: Risk factors of cardiovascular diseases

Risk factors	Number	Percentage
Positive family history of cardiovascular diseases	321	64.2
Dyslipidemia	319	63.8
Diabetes	304	60.8
Hypertension	338	67.6
Obesity	365	73
Sedentary life style	398	79.6
Geriatric age	318	63.6

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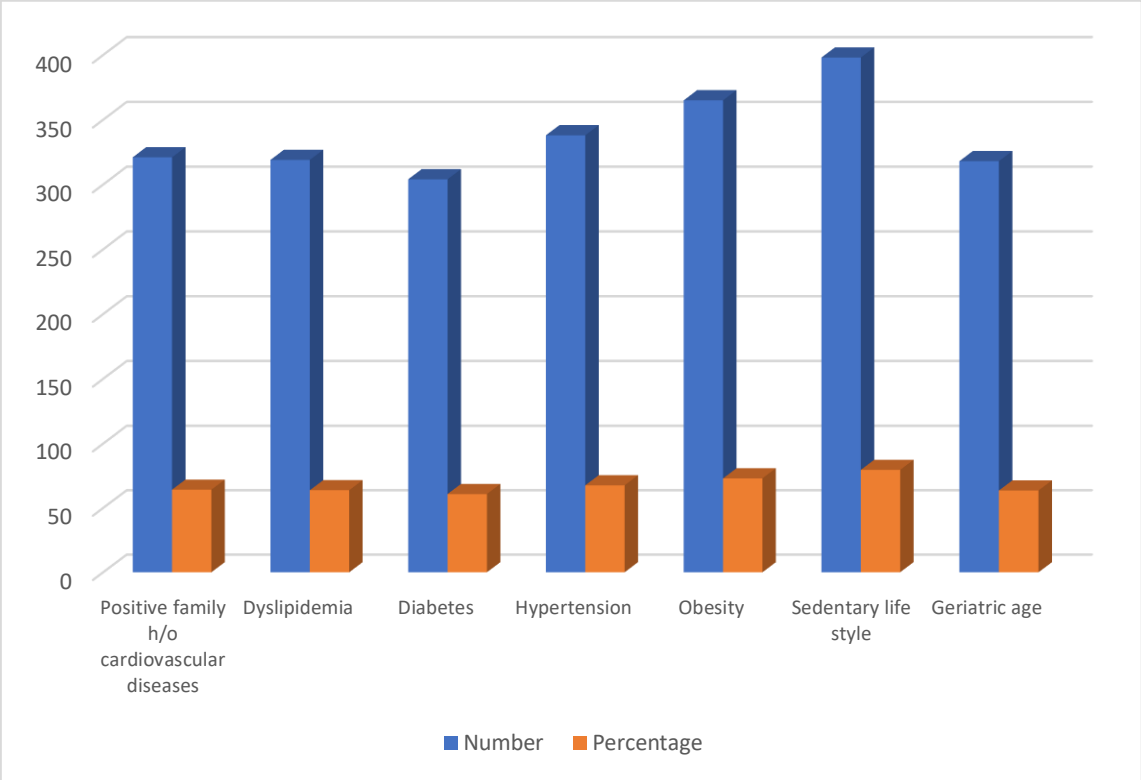
Graph 1: Risk factors of cardiovascular diseases



DISCUSSION

Coronary heart disease, commonly referred to as coronary artery disease (CAD), accounts for over 30% of global fatalities, establishing it as a primary contributor to the overall disease burden worldwide. In both North America and Europe, CAD is recognized as the leading cause of both morbidity and mortality. In the United States alone, it is estimated that more than 16 million individuals are affected by this condition.[8- 10] CAD stands as the foremost cause of death, responsible for around fifty percent of all fatalities across the globe. The National Hospital Discharge Survey (NHDS), a program under the U.S. Department of Health and Human Services and the Centers for Disease Control and Prevention, compiles an annual summary that offers comprehensive data on diagnoses and procedures related to cardiovascular diseases.[11, 12]Hence; the present study was conducted for assessing risk factors for cardiovascular diseases among patients of known population.

A total of 500 subjects were screened during the study period. Mean age of the patients was 53.9 years. Majority proportion of patients belonged to the age group of more than 50 years. 63.8 percent of the patients were males. 17.2 percent of the patients were illiterate. 30.2 percent of the patients were educated upto graduation while 17.8 percent of the patients were educated upto postgraduation. Positive family history of cardiovascular disease was seen in 64.2 percent of the patients while dyslipidemia and diabetes were seen in 63.8 percent and 60.8 percent of the patients respectively. Hypertension was seen in 67.6 percent of the patients. Obesity and sedentary life style was seen in 73 percent and 79.6 percent of the patients respectively.Parameshwara S et al. conducted a study to assess the risk factors associated with cardiovascular disease (CVD) in patients receiving treatment. Among the 262 CVD cases analyzed, 60% were male and 40% were female. The distribution of body mass index (BMI) revealed that 1.9% of the patients were classified as underweight, 40.1% as normal weight, 34.4% as overweight, and 23.7% as obese. A sedentary lifestyle was prevalent in 64.9% of the participants, which was significantly higher than the 2.3% who engaged in moderate activity and the 32.8% who reported heavy physical activity. The study identified diabetes, smoking, tobacco use, and alcohol consumption as significant risk factors, while dietary habits did not show a significant correlation within the population studied. Notably, a greater proportion of CVD patients in this study were categorized as having a normal BMI compared to findings from other research, which may be attributed to variations in lifestyle, socioeconomic factors, ethnicity, and genetic predisposition.[13]Caleyachetty R et al conducted a study to assess the prevalence and co-occurrence of behavioral cardiovascular disease (CVD) risk factors among adolescents aged 12 to 15 years across 65 low- and middle-income countries. The analysis included a total of 169,369 adolescents, revealing that 12.1% engaged in tobacco use, 15.7% consumed alcohol, 74.3% had inadequate fruit and vegetable intake, 71.4% reported insufficient physical activity, and 7.1% were classified as obese. The overall regional prevalence of exposure to three or more CVD risk factors was found to be lowest in the

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Southeast Asian region and highest in the Western Pacific region. Notably, significant heterogeneities were observed both within and between regions, which could not be entirely accounted for by key study characteristics. This indicates that adolescents in low- and middle-income countries face a considerable burden of behavioral CVD risk factors, which frequently co-occur. Therefore, initiatives focused on surveillance, prevention, detection, and control of these risk factors are essential for global health.[14]

CONCLUSION

The efficacy of intervention programs aimed at preventing cardiovascular disease in populations within developing nations warrants further investigation, with particular emphasis on the needs and health outcomes of women.

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