Cardiovascular Disease in the Indian Population: A Comprehensive Review of Risk Factors and Lifestyle Influences

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Abstract

Cardiovascular disease (CVD) is the foremost basis of morbidity and mortality in India, accounting for a considerable share of the country's non-communicable illness burden. The complex relationship of conventional and emerging risk factors contributing to CVD amongst the Indian population, which includes hypertension, diabetes, obesity, dyslipidemia, tobacco and alcohol consumption, poor nutrition, physical inactivity, and psychological stress. Speedy industrialization, financial transitions, and socio-cultural factors have extensively inclined lifestyle patterns, amplifying the threat of CVD across various demographic groups. Inequality in wellness access, health consciousness, and socioeconomic situation further intensify the issue, particularly among pastoral and underserved populations. While national public health schemes have been launched to tackle the disaster, their execution and reach remain uneven. The current review emphasizes the need for urgent, targeted obstacle strategies focused on lifestyle adaptation, community commitment, and health system strengthening. A multidimensional approach integrating ethnically appropriate health encouragement, early screening, and impartial care is crucial for reversing existing trends. The finding underscores the significance of incorporating prevention into national policy and practice to diminish the potential trouble of CVD across India.

Keywords: Cardiovascular disease, Epidemiology, India, Lifestyle modification, public health, Risk factors

1. Introduction

Cardiovascular disease (CVD) is a leading basis of morbidity and mortality posing significant burden worldwide especially in growing nation including India and other sub-continental region. It has been estimated that, worldwide CVD account for nearly one-third of all deaths [1]. The continuous rising frequency of CVD in India has been assigned to a complex relationship among genetic, lifestyle, environmental, and socioeconomic factors. Understanding the characteristics, risk factors, and lifestyle influences associates with CVD in the Indian population is essential for effective prevention and management strategies [2]. In recent decades, India has observed a remarkable epidemiological transition shifting from a burden of infectious diseases to a prevalence of non-communicable diseases (NCDs), with CVD at the forefront [3]. According to Global Burden of Disease data, India report more than a fifth of global cardiovascular deaths, even though having only around 18.0 % of the world's total population. This unequal collision highlights the urgent need to recognize and tackle the distinctive risk factors and lifestyle determinants contributing to CVD in the Indian population [4].

The Indian sub-continent presents a distinct profile for cardiovascular risk frequently referred to as the "South Asian Paradox." Unlike Western regions, where lifestyles factors *viz*., smoking, obesity, and hypertension are principal contributors, Indians mainly develop CVD at a younger age and with lower body mass index (BMI) suggesting a complex interaction of genetic disposition, metabolic characteristics, and socio-cultural controls [5]. Several studies have revealed Indian populations tend to have higher levels of abdominal obesity, insulin resistance, dyslipidemia, and inflammatory markers, all of which promote to accelerate atherosclerosis and early onset of coronary artery disease [6]. In recent years, the lifestyle setting in India has undergone major changes enforced by rapid urbanization, economic development, and changing dietary and occupational habits. Conventional healthy diets loaded with whole grains, legumes, fruits, and vegetables are increasingly being replaced by calorie-dense, processed foods high in saturated fats, sugars, and sodium [7]. Further, inactive behavior has also increased especially in urban background due to mechanized transportation, sedentary occupations, and a common decline in physical activity. These changes coupled with high levels of psychological stress and reduced sleep hygiene creating an ideal environment for the development of CVD [8].

Several non-modifiable and socio-economic causal factors also play a central role in shaping cardiovascular health in India. These may include age, gender, family history, socio-economic status, and access to healthcare services [9]. Rural-urban disparities and regional variations further complicate the scenario. Though, urban populations may have better access to wellness facilities and awareness programs, but they also face a higher burden of risk factors like stress, pollution, and inactive lifestyles [10]. On the other hand, rural individuals often suffer from short of awareness, limited wellness access, and deferred diagnosis resulting in poorer outcomes. Further, a unique challenge observed in the Indian background is the occurrence of under-nutrition and over-nutrition scenario, sometimes within the same communities or even households [11]. The "thin-fat" Indian populations characterized by a low BMI but high body fat individuals may labile to metabolic disorders although appearing lean. Moreover, young age malnutrition, low birth weight, and succeeding speedy weight gain have been coupled with increased risk of CVD in adulthood summarizing the significance of a life-course approach to cardiovascular risk assessment [12].

Other avoidable factors such as smoking and alcohol consumption also play an important role in CVD across Indian populations. Tobacco utilization in both smoking and smokeless forms remains a major supplier to the CVD burden in India [13]. Despite public health campaigns, tobacco utilization continues to be widespread, particularly among men and in rural regions. Similarly, alcohol consumption is on the rise, especially among younger individuals, and contributes to hypertension, arrhythmias, and other cardiovascular problems [14].

India's wellness system faces several limitations in efficiently managing CVD [15]. These include insufficient screening and early diagnostic programs, low devotion to treatment, and lack of continuity of care. Primary health infrastructure, especially in rural and semi-urban areas is often under-resourced and understaffed warning the delivery of preventive and chronic disease supervision services [16]. In recent years, public health policies have made pace with initiatives such as the National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS), yet large-scale functioning and individual-level impact remain areas of concern (https://nhm.gov.in/index1.php?lang=1&level=2&sublinkid=1048&lid=604).

Given this versatile scenario, a comprehensive understanding of CVD in the Indian population must amalgamate biological, behavioral, environmental, and systemic factors. The current study is aimed to create existing evidence on the epidemiology of CVD in India, outline the major risk factors with a focus on lifestyle influences, and identify gaps in prevention, diagnosis, and management strategies. Special attention is given to the relationship of traditional and emerging risk factors, local and demographic disparities, and the role of public health involvements. By mapping the intricate landscape of CVD in India, this review anticipate to inform potential research, medical practices, and policy directions aimed at reducing the growing cardiovascular burden in one of the world's most populous nations.

2. Epidemiology and Burden of CVD in India

Cardiovascular disease has turn out to be the leading cause of death and disability in India, accounting for an extensive and rising share of the national disease burden. World Health Organization report has claimed that globally CVDs caused approximately 17.9 million deaths each year (https://www.who.int/health-topics/cardiovascular-diseases). These sicknesses encompass a series of heart and blood vessel disorders, including coronary heart disease, cerebrovascular disease, rheumatic heart disease, and others [17]. More than three-fourth of CVD-related casualties were resulted from heart attacks and strokes, with one-third of these victims occurring prematurely in persons under 70 years of age. The primary behavioural threat factors for heart disease and stroke contain poor diet, lack of physical activity, tobacco use, and excessive alcohol consumption **(Table 1)** [18]. Air pollution is also a considerable environmental risk factor. The collision of these behavioural risks mainly evident in people as elevated blood pressure, high blood glucose levels, increased blood lipids, and obesity. These "intermediate risk factors" can be precised in primary care sets and serve as indicators of a higher likelihood of heart attack, stroke, heart failure, and other difficulties [19]. The occurrence of CVD in India has increased markedly over the past few decades. Between 1980s and 2020s, the age-standardized CVD death tempo in India remained considerably higher than the global standard, with ischemic heart illness and stroke as the main contributors [20]. Terrifyingly, the beginnings of CVD in Indians happen at a younger age compared to Western individuals often a decade earlier. This development is mainly concerning as it affects the economically dynamic age group (30-60 years), leading to major loss of productivity and premature death [21].

Studies indicated that urban areas primarily bore the impact of the CVD outbreak, basically due to sitting lifestyles, injurious dietary patterns, and higher anxiety levels [22]. However, more current data reveal that the CVD load is increasing rapidly in rural individuals as well, where wellbeing systems are often under-resourced and defensive healthcare is limited. The union of risk between rural and municipal areas advocates a growing countrywide disaster that surpasses conventional geographic divisions [23]. Further, CVD in India demonstrates distinct demographic trends. Men are more often affected than women, mainly in the 30-60 age groups. However, this gender break narrows with age, after menopause, women features a considerably superior risk of CVD, probably due to hormonal changes, increased inner obesity, and the rising occurrence of comorbid conditions such as diabetes and hypertension [24]. Despite these trends, CVD frequently remains under-diagnosed in women partly due to uncharacteristic symptoms and inferior health-seeking behavior.

Another prominent feature of the Indian inhabitants is the existence of the “South Asian phenotype.” Individuals of Indian derivation frequently display larger central adiposity, insulin resistance, and dyslipidemia, even at normal or low BMIs [25]. This phenotype predisposes persons to prior onset and more destructive forms of CVD. Additionally, elevated levels of C-reactive protein and lipoprotein, markers of tenderness and innate lipid irregularity, respectively, are more usually observed in Indians, adding to the intricacy of disease prediction and administration [26].

The burden of CVD is unequally dispersed across different states and sections in India. Northern and central states such as Uttar Pradesh, Madhya Pradesh, and Jharkhand accounts higher rates of CVD-related death than southern states like Kerala and Tamil Nadu [27]. These inconsistencies are partly attributed to deviations in healthcare infrastructure, literacy rates, financial development, and the accessibility of preventive services. Urban-rural inequalities are also notable, while urban populations usually have better contact to healthcare and diagnostic services; they are barer to behavioral risk factors such as unhealthy diets, smoking, alcohol use, and lack of physical movement [28]. On the contrary rural areas, although historically sheltered by more physically energetic lifestyles and simpler diets, are now facing rising CVD rates due to increasing automation, migration to urban jobs, and the acceptance of processed foods [2].

1 **Table 1** Major risk factors and lifestyle influences on cardiovascular disease in the Indian population.

Category	Specific Risk Factors	Epidemiological Insight (India)	Lifestyle/Behavioural Contributors	Public Health Implications
Modifiable risk factors	- **Hypertension** - **Type 2 Diabetes Mellitus** - **Dyslipidemia** - **Obesity** - **Tobacco use (smoking/chewing)** - **Physical inactivity** - **Unhealthy diet**	- Hypertension: about 29 % among adults - Diabetes: 8-10 % prevalence - Dyslipidemia: rising in youth - Obesity: 20-35 % in urban adults	- High consumption of fried, processed, and sugar- rich diets - Low intake of fruits and vegetables based diets - Sedentary lifestyle due to technology use and desk jobs - Tobacco and alcohol culture is normalized in some regions	- Elevated risk of early-onset CVD - Huge treatment burden - Possibility for large-scale prevention programs and lifestyle interferences
Non-modifiable risk factors	- **Age** - **Gender** - **Family history of CVD** - **Genetic susceptibility (South Asian phenotype)**	- CVD progressively affects individuals aged 30-60 - Men show earlier onset; postmenopausal women catch up - Family clustering common	- Younger individuals frequently unconscious of genetic risk - Misconceptions about heart disease being “old-age” illness	- Importance of early screening and consciousness programs in schools and workplaces
Psychosocial and economic factors	- **Chronic stress** - **Low socioeconomic status** - **Depression and anxiety** - **Health literacy gaps**	- Stress linked with urbanization and financial pressures - Low-income groups show higher natural CVD risk	- Financial insecurity, job-related stress, urban crowding - Lack of standard check-ups due to cost or access	- Mental health combination in cardiac care is needed - Community outreach in low-resource settings
Dietary patterns	- **High saturated/trans fat intake** - **Low fiber, fruit, and vegetable consumption**	- Studies show inadequate daily servings of fruits/vegetables - Widespread use of palm oil and fast foods in urban diets	- Westernized diet trends - Lack of nutrition education - Cultural preference for high-carb and high-fat meals	- Diet-focused health campaigns critical - School and media-based nutritional interventions

	- **High salt/sugar intake**			required
Physical activity	- **Lack of regular exercise** - **Prolonged sedentary time** - **Limited engagement in structured fitness routines**	- Physical inactivity: over 50 % of adults in urban areas - Youth increasingly sedentary due to screen time	- Dependence on motorized transport - Limited parks/open spaces in cities - Minimal focus on physical education in schools	- Infrastructure planning must include recreational spaces - Promotion of daily activity at community and workplace levels

Socioeconomic status further alters the threat and outcomes of CVD. Inferior socioeconomic groups are suspiciously affected, not only because of limited access to wellness but also due to higher contact to risk factors such as tobacco consumption, poor nutritional quality, and working stress [29]. Besides, these groups may lack health literacy and are less expected to seek timely care, resulting in advanced sickness presentation and inferior prognosis. Tobacco consumption remains a persistent risk factor, affecting both town and pastoral communities [30]. While smoking is more ordinary in urban men, smokeless tobacco use is extensive in rural populations and among women. Likewise, alcohol intake patterns are also shifting, with increased use amongst younger age groups and higher-income urban residents. These behavioural factors, combined with soaring levels of psychosomatic stress and reduced sleep hygiene, contribute to a situation highly favourable to cardiovascular disease development [31].

3. Key Risk Factors in CVD

Cardiovascular disease among Indian residents is determined by a complex relationship between metabolic, behavioural, and psycho-social risk factors **(Figure 1)**. While some of these are well-established universal risk contributors, their occurrence, patterns, and connections in India are distinctive due to socio-cultural, genetic, and ecological factors [32]. Among them, hypertension is one of the most potent and variable risk factors for CVD in India. Its occurrence has increased strikingly, with estimates suggesting that almost 25-30% of adults above the age of 18 are hypertensive [33]. Despite its high occurrence, understanding, treatment, and control rates remain suboptimal. Rural residents and persons from lower socio-economic divisions generally remained undiagnosed or inadequately managed. Hypertension is a chief basis of both ischemic heart disease and stroke, mainly when compounded by other co-morbidities [34]. Further, India is habitat to the second-largest population of individuals with diabetes, earning it the tag "diabetes capital of the world." Type 2 diabetes mellitus is particularly prevalent in town sites, with increasing frequency in rural areas [35]. Poor glycemic manage, delayed diagnosis, and simultaneous metabolic disorders significantly enhance the risk of macrovascular complications, including coronary artery illness and peripheral vascular disease. Notably, Indian diabetics frequently present with cardiovascular difficulties at lower body weights and younger ages compared to Western populations [36].

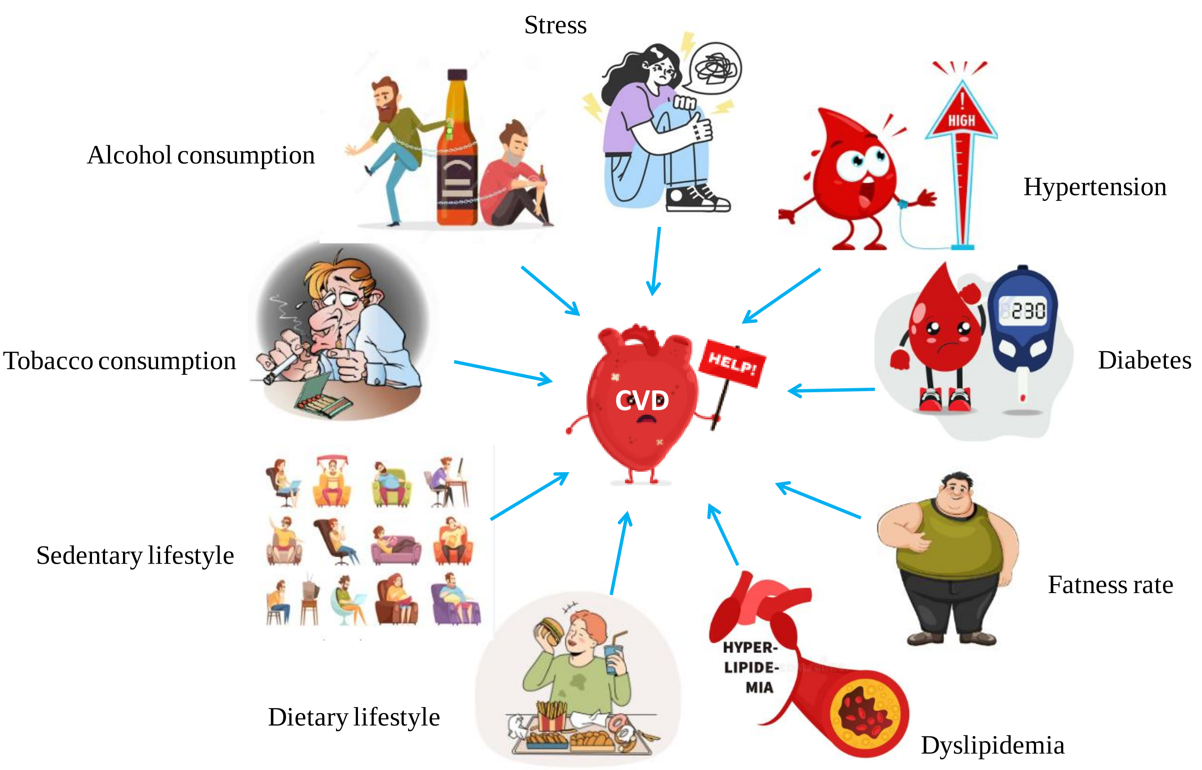

Figure 1 A comprehensive overview of the key risk factors contributing to cardiovascular disease.

Likewise, the fatness rates are rising across India, abdominal or central obesity is chiefly prominent and poses a higher cardiovascular risk. Indians lean to accumulate visceral fat, which is metabolically more active and pro-inflammatory [37]. This central adiposity contributes to insulin resistance, hypertension, and dyslipidemia, forming an essential constituent of the metabolic syndrome commonly seen in Indian adults. Even those with a normal BMI may carry an excessively high CVD risk due to abdominal fat accretion. Dyslipidemia is another key contributor to CVD threat, often characterized in Indians by superior triglyceride levels, low high-density lipoprotein cholesterol, and peripheral or moderately elevated low-density lipoprotein cholesterol [38]. Furthermore, lipoprotein a genetically firmed lipid element is more frequent in South Asians and is autonomously associated with a higher risk of myocardial infarction and stroke [39].

Factor like, tobacco consumption in both smoked and smokeless forms remained a persistent public health concerns across Indian populations. On an average about 29.0 % of adults consume tobacco, with considerable rural and gender-specific deviations [40]. Smoking is a main risk factor for myocardial infarction and stroke, while chewing type of tobacco consumption is strongly linked to hypertension and peripheral vascular illness. The high occurrence of early initiation and continued use of tobacco contributes significantly to early CVD morbidity and mortality [41]. Similarly, the use of alcohol use in India is increasing, particularly among young men in urban areas. Patterns of binge drinking and uneven consumption are frequent, both of which are more injurious than moderate, regular intake. Alcohol abuse is coupled with hypertension, arrhythmias, cardiomyopathy, and unexpected cardiac casualty [42]. The lack of standardized public data on alcohol-related cardiovascular effects highlights the need for more decisive epidemiological investigation in this area [43].

Sitting behavior has increased steadily mainly in town and semi-urban populations probably due to automation of work, decrease in physical labor, and increased screen time [44]. It has been estimated that a large proportion of Indians do not meet the WHO-recommended levels of moderate-to-vigorous physical action. Inactivity is a crucial contributor to fatness, insulin resistance, and poor lipid profiles, thereby accelerating the expansion of CVD [45]. Social expectations and gender roles also impact physical activity and health-seeking behaviours. In many communities, women are less likely to engage in open-air exercise due to cultural boundaries or safety concerns. Similarly, older adults may view disease symptoms as element of aging and avoid medical session until symptoms become severe.

Cardiovascular wellbeing in India is extremely influenced by daily life patterns and socio-cultural dynamics. Unlike solely biomedical risk factors, these determinants are surrounded by daily behavior, traditional practices, social structures, and economic authenticity [46]. Lifestyle preferences such as diet and physical doings are not just personality preferences but are formed by broader societal norms, cultural values, and structural factors such as urbanization and income inequality. Dietary lifestyle in India have altered dramatically in recent decades, with increasing utilization of refined carbohydrates, trans fats, and processed foods [47]. High intake of white rice, sugar-sweetened beverages, and fried snacks, combined with low consumption of fiber, fruits, and vegetables, has shaped a dietary pattern highly favourable to metabolic dysfunction. Sodium ingestion remains far over recommended levels mainly through processed and conventional foods, contributing to uncontrolled hypertension [48]. Cultural and local dietary practices, often high in saturated fats and simple carbohydrates, further hurdles the nutritional interventions.

In India, psychosocial stress is also a growing concern, yet it is under-recognized contributor to CVD risk. Rapid urbanization, economic insecurity, job uncertainty, social separation, and educational pressure are major sources of chronic stress [49]. High stress levels are associated with neuroendocrine activation, elevated blood pressure, and increased inflammatory markers, all of which contribute to atherosclerosis and acute coronary events. Further, stress can ultimately encourage unhealthy behaviours such as smoking, alcohol consumption, physical inactivity, and poor dietary lifestyle [50]. Mental health’s chaos such as depression and anxiety are often comorbid with CVD remain stigmatized and under-diagnosed. The lack of integrated emotional and cardiovascular wellbeing services further amplifies the impact of psychosocial stress [51]. Gender-specific stressors, including care giving responsibilities and social inequalities, mainly influence women and may contribute to the rising CVD trouble among them. Social expectations and gender roles also impact physical activity and health-seeking behaviours. Understanding these key factors is necessary for designing effective, context-specific CVD hindrance strategies in India [52].

4. Prevention and Public Health Implications

The rising trouble of CVD in India demands a practical and multidimensional prevention strategy **(Figure 2)**. Particular interaction of genetic predisposition, behavioural risks, socio-cultural factors, and environmental determinants, a holistic public wellbeing approach is essential [53]. Prevention must focus not only on person behavior alteration but also on universal reforms that craft healthy choices available, affordable, and sustainable **(Table 2)**. In India’s perspective, obvious disparities in healthcare access, consciousness, and infrastructure integrated efforts involving government, healthcare providers, community organizations, and individuals are decisive to reversing the course of CVD [54].

One of the most efficient ways to diminish CVD risk is through evidence-based nutritional alterations. Public wellbeing messaging must persuade reduced utilization of refined carbohydrates, trans fats, and sodium, while encouraging higher intake of whole grains, fruits, vegetables, legumes, nuts, and healthy fats [55]. Ethnically tailored nutritional guidelines, such as adapting the Mediterranean or DASH diet principles to Indian food, have shown promise in improving cardiovascular risk profiles. Importantly, dietary guidance must consider local food preferences, availability, and socio-economic limitations. Public allocation systems, school mid-day meal programs, and nutrition subsidies could be leveraged to encourage heart-healthy food access for exposed populations [56].

Physical activity is an important way to prevent primary and secondary type of CVD. Strategies should contain the expansion of community-level infrastructure such as public parks, pedestrian-friendly roads, and inexpensive fitness facilities [57]. Educational campaigns in schools, workplaces, and neighbourhoods should highlight the benefits of at least 150 minutes of moderate-intensity physical activity per week. Culturally accepted forms of work out, such as yoga, walking, and traditional dance, can be encouraged as accessible and low-cost options. Workplace wellness programs and flexible working hours can also assist integrate physical activity into daily routines, especially in town settings [58].

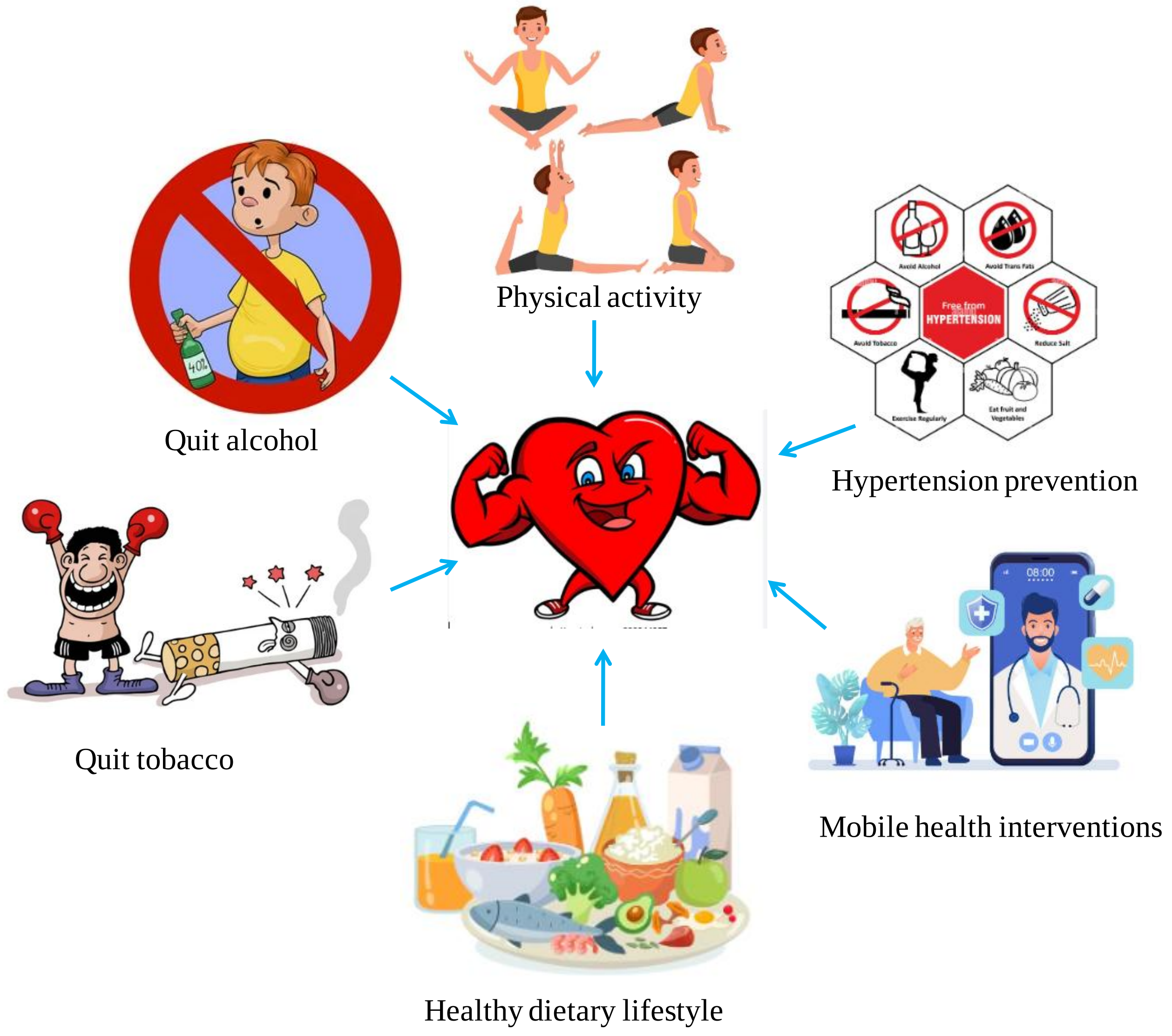

Figure 2 The multi-level strategies for the prevention of cardiovascular diseases.

Tobacco termination remains a top priority. Comprehensive strategies comprise taxation, plain packaging, public smoking bans, realistic warnings, and end support services [59]. India's National Tobacco Control Program has made strides in strategy enforcement, but the high frequency of smokeless tobacco use, particularly in rural areas, requires more focused interferences. Similarly, controlling injurious alcohol use through taxation, guideline of advertising, and community-based education is crucial [60]. Given the rise in binge drinking and alcohol-related morbidity, especially amongst youth, early preventive education and screening for at-risk individuals are essential. Psychosocial stress and mental health disorders are increasingly documented as contributors to CVD in India [61]. Lifestyle adjustment programs should integrate stress management techniques such as mindfulness, meditation, and relaxation exercises. Primary care providers should be trained to identify and handle mental health conditions in combination with cardiovascular risk assessment [62]. Creating safe, supportive social environments and reducing shame around mental illness are long-term goals that can extensively improve both psychological well-being and cardiovascular outcomes.

Table 2 Preventive strategies and lifestyle interventions for cardiovascular disease in the Indian context.

Intervention area	Recommended actions	Contextual relevance in India
Dietary modification	Increase ingestion of fresh fruits, vegetables, whole grains Reduce salt, sugar, and saturated fats	Traditional Indian diets can be leveraged for heart health with mindful preparation methods (e.g., less oil, more fiber).
Physical activity promotion	Minimum 150 minutes of moderate exercise per week Encourage yoga and walking routines	Low-cost and culturally acceptable activities like yoga are gaining popularity in both urban and rural areas.
Tobacco cessation programs	Ban on tobacco advertising Community-level cessation support School awareness campaigns	High usage in youth and rural sectors necessitates early, community-centric interventions.
Regular health screenings	Routine checkups for blood pressure, blood sugar, and lipid profile	Many individuals remain undiagnosed due to lack of routine checkups, particularly in semi-urban and rural populations.
Stress management	Promote mindfulness, meditation, and counseling Improve work-life balance	Mental health is still stigmatized, but corporate wellness and school-based programs are slowly bridging the gap.
Public health education	CVD awareness drives through media Integration in school curriculum	Low awareness of risk factors in underserved communities can be improved through multilingual outreach and mobile health units.
Alcohol consumption control	Limit availability and increase taxation Educate on safe limits	Social drinking is rising, especially among youth; regulation and education are key.
Policy & urban planning	Create pedestrian-friendly zones Increase access to recreational parks	Urban design improvements can support active living, though implementation varies across cities.
Community-based interventions	Local wellness groups Faith-based or NGO-driven health camps	Involving religious and social leaders improves trust and participation in lifestyle programs.
Digital health initiatives	Mobile apps for fitness tracking and health monitoring Telemedicine access	Rapid digital penetration allows for scalable solutions, especially post-COVID-19 pandemic.

India has launched several public health schemes aimed at reducing the trouble of CVD. The National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS) is a flagship programme that provides screening, diagnosis, and management services at the primary healthcare level [63]. The project promotes opportunistic screening of persons over 30 years of age and support lifestyle counselling. However, the reach and efficacy of such programs fluctuate widely across states. Strengthening primary care infrastructure, ensuring a stable supply of medications, and investing in trained workers are necessary to scaling up these efforts. Behavior alteration communication plays an essential role in improving cardiovascular health outcomes [64]. Public consciousness campaigns through mass media, social media, and community outreach can control attitudes toward diet, exercise, tobacco, and alcohol. Success depends on culturally applicable messaging, multilingual content, and the participation of trusted local influencers such as school teachers, community leaders, and religious figures.

Mobile health interventions, including SMS-based reminders, mobile apps, and tele-consultation platforms present a scalable solution for health support and chronic disease management, especially in isolated areas [65]. Community-based approaches are also important for sustainable prevention. Involving self-help groups, women's organizations, NGOs, and local governance bodies can strengthen the reach of awareness programs and ensure community ownership. Initiatives such as community health camps, peer support groups for diabetes and hypertension, and village health committees have shown success in increasing screening rates and adherence to management [66]. Training community health workers (e.g., ASHAs) to recognize early signs of CVD risk and convey lifestyle advice can help bridge the break between the healthcare system and underserved populations.

Addressing CVD efficiently requires coordination across several sectors, including urban planning, education, agriculture, and labour. For example, integrating health into school curricula, commanding wellness policies in workplaces, and encouraging food labelling laws can all support cardiovascular health. Policies must also deal with environmental determinants such as air pollution, which has been increasingly linked to cardiovascular morbidity and mortality. Monitoring and evaluation frameworks should be embedded within public health programs to assess impact, identify gaps, and ensure accountability.

5. Conclusion

Cardiovascular disease has become as the leading cause of mortality and morbidity in India, affecting persons at increasingly younger ages and across both municipal and pastoral populations. The current study has highlighted the intricate nature of CVD in the Indian perspective, where traditional risk factors such as hypertension, diabetes, dyslipidemia, and obesity are intensified by exceptional socio-cultural, behavioural, and environmental disputes. India's ever growing urbanization, dietary evolutions, and increasingly stationary lifestyles have powered an epidemiological shift from infectious to non-communicable diseases. Simultaneously, persistent tobacco use, rising alcohol consumption, and widespread psychosocial stress contribute to a multifaceted risk environment. Disparities based on gender, geography, socioeconomic status, and education further compound the trouble, particularly among susceptible populations with limited access to preventive care and health education. Despite these hurdles, CVD is largely avoidable through early detection, lifestyle alteration, and policy-driven public health interventions. Emphasizing heart-healthy diets, regular physical activity, tobacco and alcohol control, and stress management can significantly reduce cardiovascular risk at the population level. National programs such as NPCDCS and grassroots efforts by society health workers present promising platforms for expanding access to care and increasing public awareness. However, there is a serious need to strengthen the execution and scalability of these programmes. A shift from reactive, treatment-centric models to practical, prevention-oriented strategies must be prioritized, which demand sustained investment in primary healthcare infrastructure, health literacy campaigns, culturally customized interventions, and multispectral collaboration.

CRediT author contributions

Sundeep Gulia:- Literature search, Data analysis, Software, Writing - original draft. **Mandeep Dixit:-** Writing - review & editing. **Anil Kumar:-** Conceptualization, Data analysis, Resources, Supervision, Visualization, Writing - review & editing.

Conflict of interests

The authors declare that they have no conflict of interest with contents of this article.

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