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REVIEW ARTICLE

Coronary Heart Disease in the Philippines: Risks, Initiatives, and Future Considerations

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Introduction: Cardiovascular diseases are the leading cause of mortality worldwide, with coronary heart disease (CHD) ranking among the top causes of death and disability in the Philippines over the past decade. Understanding the risk factors and prevention strategies within the Filipino cultural context is crucial for improving public health outcomes.

Methods: A literature review was conducted to assess CHD risk factors and evaluate current public health measures in the Philippines. The review examined both modifiable and unmodifiable risk factors, as well as cultural influences on CHD prevalence and prevention.

Results: The study identified common unmodifiable CHD risk factors in the general population and highlighted the impact of modifiable risk factors within the Filipino cultural framework, including lifestyle, mental health, and environmental factors. Governmental, community, and medical organization initiatives aimed at addressing these risks have been implemented, but their effectiveness remains unclear.

Conclusion: These results emphasize the need for strengthened public health initiatives in the Philippines to increase awareness of CHD risk factors and improve prevention strategies. Future efforts should prioritize culturally tailored interventions, such as risk assessment tools, educational campaigns, and enhanced access to primary healthcare services. A comprehensive, culturally sensitive approach could significantly reduce CHD prevalence and improve overall public health in the Philippines.

Key Words: coronary heart disease ▪ ischemia ▪ atherosclerosis ▪ risk factors ▪ Philippines ▪ sociocultural factors ▪ public health

CASE PRESENTATION

A 52-year-old Filipino man presented to the emergency room (ER) with severe substernal chest pain, shortness of breath, and dizziness. The chest pain was described as heaviness and squeezing in character. On physical examination, the patient had a blood pressure (BP) of 80/50 mmHg and a heart rate of 120 bpm with cold, clammy extremities. An electrocardiogram (ECG) revealed changes suggestive of a heart attack involving a major anterior segment. Blood levels of the heart enzyme troponin were 10 times the upper limit of normal, suggesting myocardial injury. On the way to the cardiac catheterization laboratory, the patient's BP and pulse were undetectable and advanced cardiac resuscitation was administered. He was pronounced dead an hour later.

This is a common scenario in the Philippines, where patients are brought to the ER with late, yet preventable cardiovascular diseases. Nationally, basic medical care is lacking for cardiovascular diseases, with a paucity of modalities available for prevention, education, and consistent treatment.[1] Given these gaps in healthcare service accessibility for coronary heart disease (CHD), patients with CHD are at increased risk for poor health outcomes.

INTRODUCTION

Cardiovascular diseases (CVDs) are the leading cause of mortality worldwide, causing approximately 18 million deaths yearly.[2] In high-income countries, mortality from CHD, a type of CVD, has steadily declined over the last half-century. However, low- and middle-income countries (LMICs) disproportionally contribute to total global CVD mortality rates with four in five deaths

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POPULAR SCIENTIFIC SUMMARY

- Coronary heart disease (CHD) is a common condition when the arteries of the heart become narrow, preventing blood flow to the heart. It is one of the leading causes of death and disability in the Philippines, and it is important to consider the risk factors and prevention strategies of CHD through a Filipino context.
- Here, we explore CHD through a culturally sensitive lens to connect the Filipino culture to the development of CHD, raise awareness, and recommend prevention strategies.

caused by CVDs.[3,4] Among non-communicable diseases (NCDs), CVDs rank high in prevalence, alongside hypertension, diabetes, dyslipidemia, chronic obstructive pulmonary disease (COPD), stroke, chronic kidney disease, and cancer. NCDs account for about 71% or 4.1 million annual deaths worldwide, with 85% of these deaths occurring in LMICs.[5,6]

The Philippines is an LMIC with a high burden of CHD per the World Health Organization (WHO).[7] In the Philippines, the top three causes of death in 2024 included ischemic heart diseases, neoplasms, and cerebrovascular diseases.[8] Ischemic heart diseases alone, which include CHD, accounted for over 30,000 deaths, equating to approximately 20.2% of total deaths that year (an increase from 18% in 2022).[8] Certain subpopulations, like affluent male Filipinos, are at an even higher risk of CHD.[9] Those living in urban settings also have increased risk factors for CHD, including hypertension, obesity, and impaired fasting glucose.[10] Given its significant impact, raising awareness about CHD in the Philippines is critical. The findings from this literature review demonstrate the relevance of studying CHD in the Philippines via discussion of CHD risk factors, prevention, current public health initiatives, and future directions through a culturally relevant lens. This analysis will utilize a socio-ecological model, highlighting this disease in a specific cultural context at the individual, interpersonal, organizational, community, and public policy levels.

METHODS

Literature review search terms included: CHD in the Philippines, preventing CHD in the Philippines, CHD in LMICs, CVD in the Philippines, CHD pathophysiology, CHD risk factors, national demographics in the Philippines, CHD and age, CHD and sex, CHD and family history, CHD and diet, Filipino diet and heart disease, CHD and hypertension, hypertension in the Philippines, CHD and blood lipids, dyslipidemia in the Philippines, CHD and obesity, obesity in the Philippines, CHD and diabetes mellitus, diabetes mellitus in the Philippines, CHD and sleep apnea, CHD in the Philippines, CHD and physical activity, physical activity in the Philippines, CHD and mental health, mental health in the Philippines, CHD and air pollution, air pollution in the Philippines, CHD prevention, heart disease health campaigns in the Philippines, heart disease public health initiatives, and sociocultural factors of CHD, sociocultural health model. Supplemental epidemiological data were also sourced from the WHO, Centers for Disease Control and Prevention (CDC), and various governmental public health institutions in the Philippines. The broad literature review design satisfied our primary objective of thoroughly assessing CHD in the Philippines. Several statistical biases, including but not limited to information and selection biases, were recognized during methodology development. Therefore, systematic review training for the utilization of multiple, diverse literature databases, inclusion of recent reports, and interpretation of various data sources was performed for paper authors. A total of 67 articles and reports were ultimately included in this study.

RISK FACTORS AND PREVENTION

While there are some effective treatments to slow down its progression, prevention of CHD remains the most effective line of defense[11] with risk factors to diet, cardiovascular health, metabolic disease, mental health, and the environment through lifestyle modifications the primary focus. These risk factors can be classified into modifiable and unmodifiable categories (Table 1). Additionally, the multiplier effect underscores the importance of addressing multiple risk factors, as the more one has, the higher the likelihood of developing CHD.

UNMODIFIABLE RISK FACTORS

Age

Age and CHD risk are strongly correlated. The risk of CHD increases after age 45 in men and after 55 in

Table 1. Risk Factors of CHD

Risk factors	
Unmodifiable	**Modifiable**
Age	Diet
Sex	Cigarette smoking
Family history	Hypertension
Medical history of cardiovascular disease	Abnormal blood lipid levels
	Metabolic syndrome
	Diabetes mellitus
	Sleep apnea
	Physical inactivity
	Mental health
	Air pollution

women. In 2022, approximately 8.8% of the total population in the Philippines were individuals aged 60 and over.[12] Notably, four out of five people who die of CHD are over 65.

Sex

More men than women develop CHD. CHD among women tends to occur approximately a decade later than in men.[13] However, after menopause, risk among women approaches that of men, likely due to decreased estrogen levels leading to an increase in low-density lipoprotein (LDL) ('bad' cholesterol) and decrease in high-density lipoprotein (HDL) ('good' cholesterol). The risk may also be secondary to changes in weight and lifestyle. As per the Philippines Statistics Authority, 50.6% of the 180.67 million household population in 2020 were male, and 49.4% were female.[14]

Family history

A family history of CHD before the age of 55 in men and 65 in women is also a risk factor.[15] The more family members with CHD, the more elevated the risk. In the Philippines, the average age of onset of CHD has not been specifically reported, but a cross-sectional study found that a sample of Filipinos >60 years old living in rural areas are at high risk for CHD and other health conditions.[16]

Medical history of CVD

Conditions such as atherosclerosis, stroke, peripheral artery disease, and renal artery narrowing all contribute to elevated CHD risk and are increasingly prevalent in the Philippines.[17,18]

MODIFIABLE RISK FACTORS

Diet

A poor diet has been correlated with a higher risk for CHD.[19] Conversely, adoption of a healthier diet can lower this risk. The diet of Filipino adults mainly consists of refined rice, pork, fats, oils, chicken, and bread with a low intake of vegetables, fruits, and dairy.[20] In addition, commonly consumed foods are fried foods, salty seasonings like 'patis', 'bagoong', and 'toyo', and preserved foods high in salt due to a lack of refrigeration. Such processed foods, rich in sodium and trans-fats, are far more accessible and more easily stored than fresh vegetables and quality proteins. A cross-sectional study on Filipino adults' food intake found high levels of nutrient inadequacy, particularly among older adults, females, and those with lower socioeconomic status, all of which are significant risk factors for CHD.[20]

It is important to note that the relationship between diet, culture, and socioeconomic factors is significant and complex. In the Philippines, socialization in Filipino culture is largely organized around food, symbolizing love, friendship, and respect.[21] The Philippines would benefit from more culturally sensitive educational programs that encourage healthy food preparation and consumption; however, high costs and unreliable availability of healthy food products need to be addressed.

Cigarette smoking

Cigarette smoking is a significant risk factor for CHD as it reduces HDL cholesterol, damages artery linings, and promotes atherosclerosis and blood clot formation by increasing platelet stickiness.[22] In addition, smoking leads to arrhythmias, cancers, and COPD, with secondhand smoke exposure also posing a risk. Smoking is common in the Philippines; a quantitative analysis of the cigarette pack market in the Philippines states that 22.7% of the population smokes tobacco.[23] Furthermore, many adults and children are exposed to secondhand smoke in the workplace, public areas, and at home. Each year an estimated 111,000 FIlipinos die from tobacco-related diseases.[24]

Quitting smoking can dramatically reduce CHD risk. Specifically, smoking cessation has many heart health benefits, even for patients already suffering from CHD or a subsequent condition. These benefits are also correlated with the quitting of chewing tobacco, e-cigarettes, and vaping. Education, counseling, support groups, hotlines, and an integrated health plan are effective ways to elicit smoking cessation. Nicotine replacement and prescriptions like varenicline (Chantix) and bupropion (Zyban) can reduce craving and withdrawal symptoms but are not yet readily available in the Philippines. The addition of smoking cessation counseling into Filipino doctor-patient encounters can be helpful. Government protocols against smoking and legislation raising taxes on alcohol and tobacco have historically reduced tobacco use in other countries.[25]

Hypertension

High blood pressure (BP), or hypertension, is another risk factor for CHD as it damages blood vessels, marking the beginning of atherosclerosis.[17] Often asymptomatic, hypertension can go undetected ('silent killer') without regular BP checks. Lowering BP reduces the risk of CHD and other CVDs.

Hypertension in the Philippines continues to rise. An association survey among the hospital-based population in the Philippines found hypertension in 38.6% of patients.[10] However, this statistic may be a major underestimation as 60% of Filipinos die without seeing a doctor. Since the Philippines has a physician shortage[26] establishing accessible kiosks or clinics for routine BP checks are alternate public health measures.

Abnormal levels of blood lipids

Two specific lipoproteins that transport blood cholesterol from the liver to the tissues are LDL and HDL. The risk for CHD increases with elevated blood levels of total cholesterol, LDL, small-dense LDL particles, triglycerides, or low HDL levels.[27] Additionally, high levels of other blood cholesterol markers like lipoprotein A and apolipoprotein B are linked to increased heart attack risk. In women, high triglyceride levels pose a greater risk than in men, especially when combined with low HDL, high LDL, or high insulin levels.[28]

Dyslipidemia rates are high in the Philippines. A 2017 national survey revealed that 47.2% of respondents had high or 'abnormal' total cholesterol, 47.5% had high LDL, 71% had low or 'abnormal' HDL, and 38.7% had high or 'abnormal' triglycerides. A lack of healthcare funding, inaccessibility to healthcare in rural areas, and hesitancy to seek healthcare have also been reported in various regions in the Philippines and may contribute to these rates.[29]

Obesity

Obesity is defined as body mass index (BMI) above 30 (normal range is 18.5–24.9), and overweight is defined as BMI above 25. Abdominal obesity, defined as a waist circumference of above 35 inches (89 cm) in women and above 40 inches (102 cm) in men, increases CHD risk. For Southeast Asians, the abdominal obesity is defined as >90 cm (35 in) for men and >80 cm (31 in) for women.[30] Individuals with insulin resistance and large abdominal circumference are more prone to developing diabetes, often accompanied by high triglycerides and low HDL, increasing CHD risk. In addition, excess weight around the waist and abdomen is a marker of visceral adiposity and is associated with insulin resistance.

In Asians, a BMI of 23 is associated with an increased risk of CHD and diabetes; thus, a 'normal' BMI cutoff in Asians commonly starts at age 23.[31] Obesity in the Philippines has been steadily increasing, with 6.9% of adults in 2015 and 9.3% of adults in 2019 being obese.[32] The Philippines received a national obesity risk score of 6/10 by the Global Obesity Observatory, indicating a national moderate risk.[32]

Metabolic syndrome

Metabolic syndrome (MetS), or syndrome X, is a condition cluster that includes abdominal obesity, high triglyceride levels, low HDL cholesterol levels, high BP, and high fasting blood sugar, all associated with an elevated CHD risk.[33]

A 3-year retrospective study in the Philippines observed a prevalence of MetS in 51% among 1,367 adult patient participants at an urban hospital.[34] MetS can largely be prevented by lifestyle changes like exercise, weight loss, high fiber diet, low-fat diet, and controlling other risk factors like high cholesterol, high BP, and high glucose.

Diabetes mellitus

Diabetes mellitus (diabetes) is a disease in which blood glucose levels are elevated due to insufficient insulin secretion by the pancreas or the inability of the body to respond to the insulin appropriately.[35] Fasting blood glucose of 100–125 mg/dL indicates pre-diabetes, and 126 mg/dL or higher indicates diabetes.[36] Type 1 diabetes, formerly called insulin-dependent diabetes, is characterized by the failure of the pancreas to secrete insulin. Type 2 diabetes, formerly called non-insulin-dependent diabetes, is the most common type of diabetes characterized by insufficient insulin production by the pancreas or cells that are refractory to the effects of insulin.

Several CHD risk factors, including abnormal blood glucose levels and high BP, are common in individuals with diabetes. An increase in these risk factors resulting from a diabetes diagnosis can increase CHD risk. Diabetes can be prevented by lifestyle changes, such as better nutrition, increased physical activity, and active glucose blood level monitoring if a person is at risk for diabetes. In 2021, 7.5% of adults had diabetes (4,303,899 cases) in the Philippines.[37]

Sleep apnea

Sleep apnea is a disorder characterized by abnormal breathing during sleep leading to decreased oxygen levels in the blood.[38] Symptoms include abrupt stopping and starting of breathing during sleep, snoring, choking, gasping during sleep, morning headaches, awakening with a dry mouth, tiredness, irritability, and difficulty focusing. Sleep apnea is related to several CHD risk factors, including hypertension and abnormal heart rhythms.

The National Nutrition Council (Philippines) via the Healthy Living Index Survey found that 46% of Filipinos do not get adequate sleep.[39] However, prevalence studies

specific to sleep apnea in the Philippines are lacking, and awareness is low. As a result, sleep apnea may be underdiagnosed in the country.

Physical inactivity

Physical inactivity can contribute to various CHD risk factors, such as hypertension, abnormal blood lipid levels, obesity, and risk of subsequent conditions such as a heart attack.[40] It is recommended that adults engage in at least 30 min of moderate-intensity aerobic exercise with a heart rate of 120 bpm 5 days a week.[40] Muscle-strengthening activities should also be incorporated on nonconsecutive days at least twice a week. Furthermore, common activities like dancing, team sports, and household chores such as sweeping, mopping, and carrying grocery bags can meet these guidelines, helping to strengthen bones, joints, and muscles.[41]

While the indigenous population in the Philippines tends to be leaner due to their active lifestyle via farming and hunting, urban Filipinos exhibit higher levels of sedentary behavior. Filipino youth have been particularly noted as highly inactive, with a cross-sectional survey study finding Filipino adolescents as the most physically inactive adolescent boys globally.[42] Consequently, obesity rates among young people are increasing in the Philippines. Improving education on the necessity for physical activity as early as in a child's primary school program could dramatically improve the physical health of the child, their family, and in future generations in the Philippines.

Mental health

Mental health issues, particularly stress, anxiety, and depression, can contribute to CHD. Stress triggers physiological responses in the body, such as increased BP and heart rate can lead to narrowing or spasm of the coronary arteries, promoting CHD and potentially resulting in unstable angina or heart attacks.[43] Long-term stress has also been associated with inflammation, which can be predictive of CHD. Significant biomarkers of systemic inflammation, including Interleukin 6 (IL-6) and C-reactive protein (CRP), are elevated in different life stages and are thought to be signs of atherosclerosis.[44]

Depression and its pharmacologic treatment are specifically associated with increased CHD risk.[45] Directly, depression can cause decreased parasympathetic or increased sympathetic autonomic nervous activity, promoting increased BP and blood cholesterol levels, and can also cause myocardial ischemia, ventricular tachycardia, ventricular fibrillation, or heart attack.[46] Indirectly, depression can lead to decreased medication adherence or follow-up and less engagement with healthy lifestyle habits, potentially increasing CHD risk.

Mental illness ranks as the third most common disability in the Philippines, affecting approximately 6 million Filipinos with depression and/or anxiety.[47] Despite its prevalence, help-seeking attitudes toward mental illness among Filipinos and the government remain low, largely due to historical stigma surrounding mental health in the country. It has been demonstrated that only 10.72% of Filipinos demonstrate help-seeking behavior, and only 0.22% of total health expenditures are spent on mental health by the Philippine government.[47] This can be attributed to cultural taboos around mental illness, with many Filipinos viewing it as a sign of weakness or contradictory to the preferred happy mindset. Increased awareness of the importance of mental health can encourage Filipinos to address their own mental health positively. Stress and anxiety reduction are crucial for heart health, and lifestyle changes such as regular aerobic exercise, yoga, or meditation can help individuals manage stress effectively.

Air pollution

Air pollution can increase CHD risk, especially with long-term exposure and concurrence of other CHD risk factors. Air pollution cardiotoxicity can lead to increased BP, blood clotting, and atherosclerosis – all contributing to CHD.[48] Avoiding time where air pollution is high or wearing a face mask can help reduce CHD risk. In 2018, 45.3 out of 100,000 deaths in the Philippines were attributed to pollution.[49] In 2020, the Philippines had an average Air Quality Index (AQI) ranking of 52, 1.3 times the WHO recommended AQI value.[50] Little legislative action has been taken to combat increasing air pollution levels, but some local commitments have been made.

Many factors continue to contribute to the low air quality in the Philippines, such as the jeepney transportation system and the sale of single cigarettes. Jeepneys are the Philippines' most popular form of public transportation, with approximately 180,000–270,000 jeepneys actively in use.[51] They are known as intense polluters, and studies have shown that diesel-based jeepneys alone account for 15% of air toxins in Metro Manila. Moreover, local salespersons commonly sell single cigarettes to all, including minors.[52] These sales make the acquisition of cigarettes and smoking very accessible, thus constantly adding to air pollution levels.

CURRENT PUBLIC HEALTH INITIATIVES

In the Philippines, several initiatives to target risk factors are currently implemented to address CHD, with a few demonstrating successes. The federal government of the Philippines has spearheaded several of these programs. President Rodrigo Duterte signed Executive Order 26 in

2017, banning smoking in all public places, following the governmental 'Sin Tax' in 2012, which increased tobacco taxes by 1000%.[53] The increase in tax led to the decline in tobacco use from 28.3 to 23.8%, and secondhand smoke exposure decreased by 19% at work, 45% in government buildings, and 33% on public transportation from 2009 to 2015.[54,55] The Mental Health Act, passed in 2018, improved access to mental health services.[56] Additionally, the Philippine Plan of Action for Nutrition 2017–2022, formulated by the Department of Health (DoH), comprises a 6-year plan for better nutritional outcomes nationally. It includes 12 programs with eight nutrition-specific programs, three enabling support programs, and one nutrition-sensitive program.[57] Smaller-scale federal initiatives like 'Wais Papawis' (Wise Exercises) and 'Igalaw Galaw Ating Katawan' (Move Your Body) encourage physical activity to combat sedentary lifestyles.

In addition to government-led initiatives, medical organizations in the Philippines have made an impact in reducing CHD. For example, Johnson & Johnson Philippines has partnered with the Philippines College of Chest Physicians to provide cessation assistance and education to smokers.[58] The publication of the Executive Summary of the 2020 Clinical Practice Guidelines for the Management of Dyslipidemia in the Philippines by medical experts provides more holistic treatment recommendations for addressing dyslipidemia, and consequently CHD.[59] The Sleep Apnea Forum, hosted by the Sleep Society of the Philippines and Centuria Medical Makati in 2017,[39] included lectures and treatment demonstrations to educate healthcare providers on sleep apnea. The BreatheLife campaign, led by the WHO, aims at reducing air pollution and promoting public health and climate change education and was launched in Manila City in 2019.[60]

Finally, there have also been interdisciplinary initiatives looking to increase awareness of CHD, often involving both government and private sectors. One notable effort is the celebration of May as 'Hypertension National Awareness Month', organized by the Philippine Society of Hypertension, the Philippine Council for Health Research and Development, the Philippines DoH, and the International Society of Hypertension. A similar initiative is 'Heart Month', observed since 1973, with February designated as Heart Month in the Philippines.[61] During this month, the DoH and the Philippine Heart Association (PHA) implement various events across the country to promote cardiovascular health and CHD. To fulfill the goals of their Heart Month slogan, programs hosted by the PHA, DoH, as well as local hospitals during this period include walkathons and other public activities. These events also typically include health screening services, such as ECG readings, BP, heart rate, and BMI monitoring.[62] Extending beyond these annual programs, the Philippines is a part of the WHO's continuous HEARTS project that aims to help countries improve CVD management through primary health care.[63] The HEARTS project guides health authorities in the prevention, detection, and treatment of CVDs, identifying problems and addressing barriers to care. For example, the project highlighted the irregular availability of NCD medicine, particularly for CVDs, and inaccessible health supplies. It also underscored the limited capacity of health workers to counsel patients and families on healthy life choices and how to recover from a heart attack.[64] Overall, these governmental, medical, and interdisciplinary programs are designed to increase access to healthcare for better health outcomes and restrict access to harmful products. Remaining challenges within these initiatives include misperceptions of healthcare needs, lack of communication, resource inaccessibility, low community support, and lack of policy uniformity.[65] Despite these barriers, and that the efficacy of many of these programs has yet to be measured, they are significant steps toward mitigating CHD in communities in the Philippines.

FUTURE CONSIDERATIONS

As a developing nation with a unique demographic and diverse geographic profiles, the Philippines faces a significant challenge in reducing the incidence of CHD. However, through coordinated efforts across multiple sectors, including government, healthcare, non-profit organizations, and community leadership, it is possible to implement effective strategies to mitigate this public health issue. A holistic and comprehensive approach working at the individual to public policy levels is necessary to address the multifaceted nature of CHD, complicated by the complex logistical, political, and economical challenges present within the country. The following initiatives sustained across various sectors could make significant strides in improving cardiovascular health and reducing the burden of CHD on people living within the Philippines.

Addressing risk

The Philippines requires robust tools and programs for assessing and preventing cardiovascular risk among its population. Accurate risk assessment is vital to disease prevention, enabling development individually appropriate healthcare plans, screening, and behavior modification. Standardized questionnaires have been developed to quantify an individual's risk of developing CHD over the next decade, such as the QRISK3 model, an algorithm commonly used in the United Kingdom by healthcare providers.[66] However, no standardized test exists specifically for the Philippines, hindering the accuracy of assessments. A standardized risk assessment specific to

the Philippines would be a productive first step in preventing the proliferation of CHD if validated with primary data from the Filippino population, to accurately reflect this ethnic group, and with questions specific to the risk factors that are increased or unique to the Philippines. To minimize future risk, awareness campaigns are also necessary to educate the public about CHD risk factors and prevention strategies. Community-based screenings and educational workshops, along with a standardized risk assessment could play a pivotal role in early detection and prevention.

Food security and availability

Given the link between diet and heart-health, improving food security and promoting the availability of nutritious, affordable, heart-healthy food options is critical. Initiatives could include government subsidies for healthy foods, improved logistics such as refrigeration and supply to impoverished areas, urban community gardens, and nutritional education programs in schools and communities.

Health provider education and stigmatization management

Healthcare providers need ongoing education about the latest advancements in CHD prevention, diagnosis, and management. In addition, addressing the stigma surrounding the diagnosis of any critical disease, particularly in rural areas, is essential. This would involve training health workers in the field to effectively communicate with patients about the CHD risk and treatment, and how to encourage a more open dialogue about heart health. This conversation would also need to include discussion about lowering the negative financial consequences on a family resulting from a serious disease diagnosis, since this factor alone tends to keep people, typically in more impoverished areas, from seeking medical attention.

Access to healthcare

Enhancing access to healthcare, particularly in underserved areas, is vital, and barriers to care can make addressing health challenging. In rural areas of the Philippines, there may be only one hospital within several hours of travel. Many families in rural areas do not have a vehicle or financial means to make this type of trip, which makes access to medical help impossible. Management of varying types of different health concerns, including both physical and mental health, could be integrated to make healthcare more comprehensive in fewer visits and increase healthcare accessibility.

Community leadership

Empowering local leaders to take an active role in health initiatives can lead to more effective implementation of programs. Community leaders can act as advocates for healthy lifestyles and liaise between health authorities and the local population to tailor interventions to specific community needs. Working alongside community leaders on other important issues within their region can help build trust between them and initiative team members, enhancing relationships and thereby enhancing future initiatives.

Physical activity

Sedentary lifestyles contribute significantly to CHD. National initiatives promoting physical activity, such as public exercise facilities, community sports programs, public parks, and workplace wellness initiatives, could play a critical role in mitigating this risk.

Pollution reduction

Air pollution is a known risk factor for CHD. Implementing policies to reduce environmental pollution, such as stricter emissions regulations, promoting public transport, and encouraging the use of clean energy sources, can significantly impact public health, including lowering the incidence of and complications associated with CHD.

Communication and power infrastructure

The Philippines includes thousands of islands and isolated communities. Access to electricity and communications is sparse in rural areas, and in some places, it does not exist. Electricity is essential for modern health care, and a robust communication infrastructure is vital for disseminating health information. Utilizing digital platforms, social media, and mobile health applications could enhance the reach and efficiency of health care, health education, and awareness programs.

Non-profit sector

Increased presence from the non-profit sector could initiate or augment these initiatives by providing resources, expertise, and grass-roots community engagement. Their role in education, advocacy, resource procurement, information gathering, and direct service provision can fill gaps left by government and community programs, especially in underserved areas. Current non-profit organizations at work in the Philippines include ABC's For Global Health and La Conexion.

CONCLUSION

Coronary heart disease is the leading cause of death in the Philippines and globally. This review aimed to highlight the significant impact of CHD in the Philippines through a socio-ecological model[67] by underscoring its risk factors and emphasizing disease prevention efforts from an individual to policy scale. By acknowledging the unique ethnic influences on CHD risk factors, we can develop tailored solutions to address these challenges. Current initiatives in the Philippines, driven by both the federal government and major healthcare organizations, encompass a wide range of strategies. These include public awareness campaigns and direct interventions targeting key risk factors. This multifaceted approach is crucial for combating CHD in a high-prevalence population.

In summary, addressing the complex challenges posed by CHD in the Philippines demands a comprehensive strategy. Such a strategy must navigate the country's logistical, political, economic, and cultural landscapes. Collaboration among healthcare professionals, policymakers, and community leaders is essential for devising and implementing effective interventions, as well as improving access to care. Culturally sensitive approaches and multi-sector cooperation are key to reducing CHD prevalence and enhancing outcomes for individuals in the Philippines and beyond. Further research is essential to understand the specific risk factors and proposed intervention strategies for CHD in the Philippine context, guiding more effective and customized engagement.

ARTICLE INFORMATION

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