



Policy Action for CVD Prevention: A Call to Action for Nurses Globally

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Cardiovascular disease (CVD) is the leading cause of death and disability globally, disproportionately affecting vulnerable populations, including women and infants. Despite significant preventability, Cardiovascular disease (CVD) continues to be underfunded and overshadowed by cancer in terms of policy attention, creating a significant health inequity. This article advocates for a shift in international health policy to prioritize CVD through targeted, disease-specific interventions and multilevel strategies addressing both modifiable and primordial risk factors. It highlights the crucial role of nurses and healthcare professionals in influencing CVD prevention and treatment, from individual behavior changes to policy advocacy. The article concludes that collaboration across sectors, including healthcare, policymakers, and communities, is essential to implement effective CVD strategies and reduce global mortality and morbidity. Clinically, nurses are positioned to lead in patient education, support community-based initiatives, and advocate for stronger policies to combat CVD worldwide.

KEY WORDS: cardiovascular prevention, policy, nursing, international, advocacy

The Need for International Policy to Deliver Cardiovascular Health

Throughout the world, cardiovascular disease (CVD) claims more lives and causes more disability and human suffering than any other condition and is a significant cause of global disability-adjusted life years.¹ It is a leading cause of maternal mortality with 16% of global maternal deaths attributable to hypertensive

disorders.² Poor maternal cardiometabolic health further contributes to a higher risk of CVD in offspring and a growing prevalence of pre-pregnancy cardiometabolic risk factors put women at risk for cardiovascular (CV) complications during pregnancy, with additional long-term risk for both the mother and the child.³ Global trends illustrating a greater prevalence of CVD risk factors such as obesity, hypertension, diabetes, poor diet quality, and sedentary behavior raise significant concerns for the future burden of CVD morbidity and mortality.⁴ There is a tremendous need for all countries to invest in public health programs and clinical interventions to target modifiable risks, promote healthy aging, and reduce CVD-related disability and premature death.⁴ At all levels of prevention, from primordial to tertiary, there is an opportunity to mitigate disease risk and burden.^{5,6} However, although CVD prevention is vitally important, challenges persist in terms of how cardiac conditions are perceived and risk is understood at a personal and societal level, so a more nuanced understanding of CV health is required to effectively tackle this disease. Nurses, doctors, and other healthcare professions are ideally placed to contribute to this discourse and influence the direction and implementation of effective CV health policy.

Throughout the world, a significant number of people are exposed to primordial risk factors that are

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beyond their control, such as family history of CVD, genetic defects, damaging environmental conditions, and social determinants of health.^{7,8} Although these factors are strong drivers of CVD, their impact becomes particularly serious when coupled with modifiable behaviors, for instance, smoking, unhealthy diet, and lack of physical activity. The structural inequity underpinning primordial risk factors is compounded by an underinvestment in addressing CV risk factors and CVD, overall.⁹ Despite the rise of noncommunicable diseases such as CVD in low- and middle-income countries, traditional financing mechanisms and health systems have been designed to address acute and infectious diseases. This is coupled with a lack of policy direction to promote CV health internationally.

Looking at the example of cancer, disease-specific policy is most effective in driving real investment and changes that have lasting impact, such as the European Union Beating Cancer Plan. In contrast, CVD is often tackled with policies that are generalist in nature, aimed at reducing the burden of noncommunicable diseases across the board. It is accepted that obesity, tobacco, and sedentary behavior are underlying causes of many comorbid conditions (eg, diabetes, hypertension, and chronic kidney disease). However, adopting generic policies, such as tobacco control, fails to invest in the prevention, treatment, and research required to enhance CV prevention. To correct this deficit and create definitive policy change, we need to work collectively to deliver the innovation, infrastructure, and investment required to deliver a healthier CV future for citizens everywhere. This requires nurses and all healthcare practitioners to work collaboratively across sectors with policy makers, service commissioners, charities, patients, and the public. To this end, a coalition of more than 20 international groups recently formed the European Alliance for Cardiovascular Health,¹⁰ and this group has been instrumental in securing political commitment to deliver a European CV Health Policy during the next 3 years.¹¹ Such developments illustrate that CV doctors and nurses have the knowledge, credibility, and commitment to advocate more effectively on CV issues and, in doing so, move the dial on CV health policy and implementation internationally. We issue this call to action to assert the need for affirmative policy change internationally to effectively tackle CV mortality and morbidity and urge CV nurses and healthcare professionals with relevant expertise to constructively contribute to moving this agenda forward within their respective sphere of influence.

Multilevel Risk Factor–Specific Strategies and Resources for Increasing Adherence

Effective management and prevention of CVD require a holistic approach for addressing multiple and interrelated risk factors simultaneously while considering individual,

community-, and societal-level determinants.^{12,13} Interventions and resources to increase adherence to preventive measures and management approaches must be tailored to specific risk factors and implemented across these various levels.¹⁴ These multilevel strategies and using available resources across diverse populations can significantly prevent and manage CVD. Healthcare providers, policymakers, and community leaders should collaborate to create comprehensive prevention programs that address multiple risk factors and leverage various interventions across individual, community, and societal levels.

By virtue of their enhanced patient-facing role and commitment to making “every contact count,” nurses are optimally positioned to influence and deliver multilevel risk factor–specific strategies.¹⁵ Evidence of this impact is discussed in the following sections outlined by the key prevention factors of the American Heart Association's Life's Essential 8,¹⁶ which aims to reinforce and inspire nurses to embrace their potential as CVD risk reduction champions.

Overweight and Obesity

Obesity is a complex, multicausal phenomenon related to the modern lifestyle, and as a result, it constitutes a serious social problem and health pandemic.¹⁷ Together with pandemics of malnutrition and climate change, a 2019 report from *The Lancet* Commission indicates that these 3 pandemics represent the triple burden of “The Global Syndemic.”¹⁷ Internationally, the adult obesity rate has more than doubled since 1990, and adolescent obesity has quadrupled,¹⁸ contributing to both CVD morbidity and mortality and to the additional CVD risk factors of dyslipidemia, type 2 diabetes, hypertension, and sleep disorders.¹⁹ Despite this rapid increase in prevalence, no country has successfully reversed the epidemic because the systemic and institutional drivers of obesity remain unrelenting. Furthermore, many evidence-based policy recommendations to halt and reverse obesity rates have been endorsed by member states of the World Health Assembly, but they have failed to be translated into measurable and meaningful change, largely because of inadequate political leadership and governance along with competing commercial interests and lack of public demand for action. Sadly, it seems the tremendous health and economic burdens caused by obesity are not seen as urgent enough to generate the public demand or political will to implement the recommendations of expert bodies for effective action. Given our significant numbers, nurses can be the agent for change and demand public action to develop the policies that are needed. In addition to our trusted influence in the healthcare field, nurses should exert influence on the public policy landscape. Nurses are recognized as powerful motivators for patients and

families in their care. With an understanding of how obesity is inextricably linked to systemic and social determinants, nurses can help patients navigate these complex environments to empower those choices that are within individual control.

Smoking

Smoking is one of the major modifiable risk factors for CVD, with 1.25 billion tobacco smokers identified worldwide.²⁰ The global prevalence of tobacco use has declined from 32.7% of the population in 2000 to 22.3% in 2020.²¹ However, the risk of CVD and, in particular, ischemic heart disease remains elevated for up to 20 years post-cessation,²² which highlights the importance of early prevention and cessation. Tobacco farming in the European Union could be handing out 100 million Euros as part of the Common Agricultural Policy farming subsidies between 2023 and 2027.²³ This subsidy of the tobacco industry appears to directly conflict with the European Union “Beating Cancer Plan,” aiming to reduce tobacco consumption to a “tobacco free generation” by 2040 and the prevention of 24% of cancer deaths by 2035.²⁴ Yet, where is the outcry against such immoral use of public funds? In the United States of America, tobacco companies have been identified as promoting a “smoke-free transformation” by replacing cigarettes with nicotine and tobacco products, but they have been found to fund industry favorable research, therefore promoting corporate products and messaging.²⁵ A major policy adopted worldwide is the World Health Organization (WHO) Framework convention on tobacco control,²⁶ seeking to coordinate international efforts to reduce the tobacco epidemic by implementing measures that include marketing restrictions, increased taxation, media campaigns to encourage cessation, and smoke-free air laws. This was accompanied by the MPOWER technical package designed to implement the framework convention. In 2022, 151 countries had adopted at least 1 MPOWER strategy; however, that leaves 44 countries without a tobacco use reduction strategy. As healthcare professionals, we should be advocating more effectively to draw attention to these structural inequities.

There is significant evidence that providing financial incentives for smoking cessation, such as cash payments or vouchers for food and groceries, boosts long-term cessation rates of greater than 6 months, with the majority of incentive schemes found in the United States of America.²⁷ Countries with high cigarette prices such as the United Kingdom, Australia, and New Zealand have found the cost of tobacco products to be a significant motivating factor in cessation.²⁸ Lower- to middle-income countries tend to have fewer resources in relation to medications for cessation and access to healthcare professionals for advice, and even

with a low prevalence of smoking, those in the United States of America with no healthcare insurance for access to cessation support services continue to smoke.²⁹ The implementation of strategies such as smoke-free laws; access to smoking cessation advice and nicotine replacement therapies; systematic lowering of nicotine in cigarettes; and innovative technologies such as data from smart devices or incorporation of artificial intelligence will aid cessation adherence.³⁰ However, all of these strategies are not readily available, with access dependent on the funding and governmental strategies of their country.

Multilevel strategies are necessary to reduce smoking burden and nurses have the capacity to support these. At the individual level, there is evidence demonstrating the effectiveness of nurse-led behavioral counseling/motivational interviewing on smoking cessation rates in patients with CVD.³¹ Nurses can use their clinical leadership to support and inform the implementation of community-level approaches involving smoke-free policies in public spaces and workplace cessation programs³² while advocating to influence taxation on tobacco products and antismoking media campaigns at the societal level.³³ There are ample resources available to nurses, including the WHO Framework Convention on Tobacco Control, quit-lines, and mobile health applications, which can support smoking cessation strategies.

Physical Activity, Exercise, and Sedentary Behavior

Globally, sedentary behavior among adults has been increasing with nearly 1/3 (31%) of the population classified as physically inactive. This is an increase of 5% between 2010 and 2022 and is projected to rise to 25% by 2030.³⁴ Perhaps even more disturbing is that 81% of adolescents (aged 11–17 years) globally are physically inactive.³⁵ Lack of physical activity or sedentary activity is an independent risk factor for all-cause mortality, CVD, cancer, and type 2 diabetes. Despite the endorsement of a global action plan on the prevention and control of noncommunicable diseases by the World Health Assembly in 2013, with a focus on increasing physical activity,³⁶ implementation and engagement with the necessary sectors beyond the healthcare sector have been challenging.³⁷ A lack of reliable, dedicated resources, both human and fiscal, and the absence of strategic connections between key government departments have contributed to this lack of progress. In 2018, the WHO published a report outlining the “Global Action Plan on Physical Activity, 2018–2030,” with 4 strategic objectives and corresponding policy actions to create “active societies,” “active environments,” “active people,” and “active systems.”³⁷ The overarching goal is to encourage all adults (aged ≥18 years) to engage in a minimum of 150 to 300 minutes of

moderate-intensity aerobic activity or at least 75 to 150 minutes of vigorous-intensity aerobic activity throughout the week, with moderate-intensity muscle strengthening activities on at least 2 days of the week for additional health benefits.³⁷

To create “active societies,” population-focused solutions must implement best practice communication campaigns, conduct national and community-based strategies to enhance awareness and understanding, implement regular mass participation initiatives in public spaces, and strengthen the training of professions within and outside the health sector.³⁷ To create “active environments,” there must be action focused on strengthening the integration of urban and transport planning policies to promote walking and all forms of wheel-based mobility (eg, cycling, wheelchairs, scooters and skates), and on improving the network infrastructure for walking and wheel-based mobility. Furthermore, road safety needs to be improved to protect the personal safety of pedestrians and others using wheel-based mobility, yet road traffic deaths remain high especially in low- and middle-income countries.³⁸ Access to high-quality public and green open spaces and public amenities must be prioritized to allow for increased and more equitable access. For example, access to green spaces has been shown to have a positive effect on physical activity levels in adults.³⁹

To support more “active people,” high-quality physical education and positive opportunities for active recreation must be prioritized with a whole-of-school approach at all levels of schooling. A retrospective longitudinal study of men in the United States of America, in which researchers aimed to determine the greatest predictors of physical activity at the age of 75 years, found that playing a varsity sport in high school was the single strongest predictor of later life activeness.⁴⁰ Despite this evidence and recommendation, a recent report by the United National Educational, Scientific, and Cultural Organization determined that 63.8% of countries worldwide allocate less than 2% of their national education budgets to physical education, with only 1 in 3 secondary school students meeting the minimum requirement of 180 minutes/week, and only 7.1% of schools implement equal physical education time for boys and girls.⁴¹ In addition, to foster more “active people,” healthcare providers must be better trained to incorporate physical activity assessment and guidance, physical activity programs within parks, other natural environments, and community settings should be enhanced, along with specific programs for older adults and populations who are the least active.³⁷ To create “active systems,” actions must be directed at policy frameworks, data systems, national research, advocacy, and financing mechanisms.³⁷

Nurses can have tremendous influence on a global physical activity action plan. At the micro-level, they are trained to educate and support patients with healthy lifestyle changes, namely, increasing physical

activity.⁴² For instance, a recent meta-analysis of randomized controlled trials that examined the effectiveness of physical activity interventions delivered or prompted by primary healthcare professionals (including nurses) found that these approaches were effective at increasing participation in self-reported moderate- to vigorous-intensity physical activity in adult patients.⁴³ Examples of interventions nurses can effectively use to improve physical activity levels in patients are personalized exercise prescriptions, wearable activity trackers, and mobile health applications.⁴⁴ At the societal level, nurse-led, community-based interventions, such as exercise classes, walking groups, and group education/counseling are effective at inducing physical activity changes.⁴⁵ Ultimately, nurses are engaged throughout society, including schools, community centers, health centers, and universities, which provides them with the opportunity to advocate, lead research, and influence policy to increase physical activity across micro- and macro-levels.

Dietary Intake

The global population in the 21st century is concurrently burdened with both epidemics of under/malnutrition and overnutrition/obesity. Common to both epidemics is food insecurity, particularly the access to and affordability of healthy, unprocessed food.⁴⁶ Around the world, an estimated 3 billion people cannot access safe, nutritious, and sufficient food.⁴⁷ Seemingly disparate outcomes, the common factor of food insecurity contributes to CVD.⁴⁸ Human conflict, climate extremes, economic variability, lack of access to and unaffordability of healthy diets, unhealthy food environments, and persistent inequality continues to drive food insecurity and malnutrition all over the world.⁴⁹ Combined with and connected to food insecurity, the specific dietary risk factors that contribute to global CVD mortality and disability-adjusted life years include high sodium intake, low whole grain intake, and low legume intake.⁵⁰ However, when examined by sociodemographic index, countries with the highest sociodemographic index had CVD-associated mortality and disability-adjusted life years attributable to high red and processed meat intake, whereas middle sociodemographic index regions were attributable to high-sodium intake, and low sociodemographic index regions attributable to low fruit and vegetable intake.⁵⁰

The use and misuse of alcohol also make a significant contribution to CVD burden, with recent, large-scale evidence confirming that even at moderate intake levels, there is a dose-dependent relationship.⁵¹ This calls into question previous research that asserted a cardio-protective role of alcohol, as this may well be attributed to other lifestyle factors. Alcohol use is associated mainly with hypertension, stroke, and peripheral

artery disease, but the impact on overall CV mortality is significant at around 20%. On a macro-level, the taxation of alcohol and minimum unit pricing are strongly advocated, as well as more effective labeling that details alcohol content and associated harms. As new evidence emerges, there is an important role for health professionals, including nurses, in educating our citizens about the relationship between alcohol and CV risk.

Nutrition education for health professionals is sorely lacking,⁵² despite the need and expectations that patients have for their healthcare providers to be key informants and counselors in nutrition.⁵³ In the absence of solid, trusted nutrition guidance, people often turn to other avenues such as social media for food and nutrition education, which may lead to misinformation.⁵⁴ Dietary recommendations promoting sustainable and healthy patterns often overlook how and why people eat what they do. Taste, cost, and health motivate consumer food purchase, and sustainable, healthy foods are perceived to be and actually can be higher in cost than more highly processed, unsustainable, and unhealthy foods.⁵⁵ As with all major social determinants of health, governments have a central role in creating a healthy food environment that enables people to adopt and maintain healthy dietary practices.⁴⁷ The WHO recommend 3 major policy actions: (1) creating coherence in national policies and investment plans, (2) encouraging consumer demand for healthy foods and meals, and (3) promoting appropriate infant and young child feeding practices.⁴⁷ For example, promoting dietary patterns, such as the Dietary Approaches to Stop Hypertension, at the individual level is an effective strategy for CVD risk reduction.⁵⁶ At the community level, improving the availability of affordable and healthy foods that promote CV health, such as farmers' markets and community gardens, is necessary.^{57,58} Furthermore, food labeling policies and subsidies for healthy foods can promote access to healthy foods at the societal level.⁵⁹

To support healthy dietary practices, nurses must advocate for their own education and competencies in nutrition, promote healthy policies, educate patients, and support healthy nutrition for families. There is evidence to support the capacity of nurses to achieve this. At the micro-level, nurse-led clinics have been shown to improve dietary intake in patients with CVD.⁶⁰ Societally, community-based, nurse-led education has been shown to improve Mediterranean diet scores.⁶¹ Ultimately, nurse training in healthy lifestyle promotion optimally positions them to influence and deliver healthy dietary practices across all areas of society.¹⁵

Lipid Management

The accumulation of cholesterol-containing atherogenic lipoproteins in vessel walls is the leading cause of atherosclerotic CVD. Recent estimates have indicated

that elevated non-high-density lipoprotein cholesterol was responsible for nearly 4 million worldwide deaths in 2017. Half of those deaths occurred in east, south-east, and south Asia, signaling a shift in global demographic trends of lipid risk burden.⁶² Contributing to this trend is the concurrent dietary and behavioral trends of the global rise in adiposity⁶³ and greater intake of animal-source foods in middle-income countries.⁶⁴ In addition to lifestyle management, lipid-lowering medications are the hallmark foundations of guideline-directed care to mitigate lipid risk. However, there is much variation in how and where these guidelines are implemented.⁶⁵ In a review of published guidelines and expert consultations, the World Health Federation Cholesterol Roadmap 2022 summarizes the diverse approaches needed to address lipid management, including a greater focus on primordial prevention, low-cost availability of cholesterol testing, universal cholesterol screening, more comprehensive risk stratification, access to affordable lipid-lowering therapies, and attention to health literacy for healthcare providers.⁶⁶ Lipid management strategies also include genetic testing for familial hypercholesterolemia and medication reminders for individuals, workplace cholesterol screening programs at the community level, and trans fat bans and improved access to lipid-lowering therapies at the societal level.⁶⁷

Hypertension

Hypertension is one of the most critical risk factors for CVD and was responsible for 8.5 million deaths in 2015, with 88% of those deaths in low- and middle-income countries.⁶⁸ Many adults with hypertension are unaware (46%) that they have the condition, less than half of adults (42%) with hypertension are diagnosed and treated, and only 21% of adults with hypertension have it effectively managed.⁶⁹ Prevention and management of hypertension require a comprehensive strategy at both individual and population levels, starting with nonpharmacological interventions throughout the life course.⁷⁰ However, such interventions have not been well evaluated for effectiveness, particularly in global or multicountry contexts,⁶⁸ and implementation research is sorely needed to identify what individual and population-level interventions and strategies are most effective and sustainable in varied settings.⁷⁰

Pharmacological treatment of hypertension is one of the most effective strategies to reduce blood pressure and improve outcomes. Substantial evidence demonstrates that a 10 mm Hg reduction in systolic blood pressure or a 5 mm Hg reduction in diastolic blood pressure is associated with significant reductions in all major CVD events.⁷¹ Despite this evidence and the fact that many antihypertensive drugs are safe and cost-effective, the widespread availability and affordability of pharmaceutical options are limited, and their use is still low.⁷² In

What's New and Important

- Collective action is needed to drive investment and policy changes to improve cardiovascular health globally.
- Examples include individual-level strategies like home blood pressure monitoring, community-based hypertension screenings, and societal approaches such as policy changes for better access to medications. Nurses are highlighted as key players in implementing these strategies, given their patient-facing roles and ability to influence behaviors.
- Nurses are encouraged to use their trusted position in society to influence policy change and improve the public perception of cardiovascular disease, pushing for more investment and comprehensive health policies.

addition, hypertension treatment varies greatly across countries because of differing financial resources, extent of health insurance and facilities, how frequently people interact with healthcare providers, whether clinical guidelines exist and/or are adopted, and the availability of medicines. Individual-level strategies include home blood pressure monitoring, mobile health applications, and instruments to promote medication adherence.^{73,74} Community-level interventions such as community-based hypertension screening and telehealth interventions can be effective approaches.^{75,76} Very often, nurses, pharmacists, and other healthcare professionals play a vital role in the detection, treatment, and monitoring of hypertension.^{68,71} Societal approaches to reducing the burden of hypertension include reduction policies and improved access to antihypertensive medications.⁷⁷

Hyperglycemia

The prevalence of hyperglycemia and diabetes has been rising rapidly in the past 3 decades, with 14% of adults worldwide living with diabetes. In 2021, diabetes was the leading cause of 1.6 million deaths, with 47% of those deaths occurring before the age of 70 years.⁷⁸ The high and rising burden of diabetes is largely attributable to modifiable risk factors, including overweight/obesity, poor diets, and low physical activity.⁷⁹ For specific diabetes prevention and management, individual strategies include continuous glucose monitoring and diabetes self-management and monitoring strategies. Community-level interventions include the National Diabetes Prevention Program and peer support groups, whereas societal approaches include sugar-sweetened beverage taxes and improved access to diabetes care.⁸⁰

Sleep Quality

Inadequate sleep and poor quality of sleep are associated with overall CVD and correlated with previously discussed risk factors such as overweight/obesity, hypertension,

and diabetes. As a more recently recognized and studied risk factor, sleep duration and quality are under-recognized and undervalued by both clinicians and patients and therefore not as well assessed or reported.⁸¹ However, sleep should be promoted as an essential pillar of health, equivalent to nutrition and physical activity. To improve sleep health across the globe, a focus on education and awareness, research, and targeted public health policies are needed. Nurses are well positioned to implement recommended sleep health educational programs and awareness campaigns and to assess individual and family sleep quality. Additional measures that are needed include increasing, standardizing, and centralizing data on sleep quantity and quality in each country across the globe, and developing and implementing sleep health policies across sectors of society.⁸²

Future Policy Direction

The discussion provided in this article strongly evidences the need for comprehensive policy interventions and more coherent implementation plans that drive macro and micro-level improvements in CV health. The challenge is complex, because although personalized approaches to comprehensive screening, early detection, and heart healthy lifestyles are required on an individual level, we must also facilitate improvements in CV health at a societal level. To do this effectively, we need to collaborate across sectors and effectively bring the public, patients, and policy makers together with professionals and industry partners to become the catalyst for change. Ultimately, if we fail to tackle the social determinants of health, then actions at the personal or patient level are severely compromised. As nurses, we understand that CV prevention is a critical part of our defense against this disease, but in addition, we should champion our role as advocates for comprehensive CV health plans nationally and internationally and become more effective in this respect. Nurses are frequently regarded as the “most trusted professional group in society”; we need to use this influence to improve the public perception of CVD and drive for more investment in effective policies and robust implementation plans internationally.

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