



## LACK OF AWARENESS OF HEART DISEASE

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<https://www.doi.org/10.5281/zenodo.10464331>

### ARTICLE INFO

Received: 30<sup>th</sup> December 2023

Accepted: 05<sup>th</sup> January 2024

Online: 06<sup>th</sup> January 2024

### KEY WORDS

Heart Disease, Cardiovascular Health Education, Public Awareness Campaigns, Risk Factors, Preventive Measures, Early Detection, Cardiovascular Health Literacy, Community Health Initiatives, Telemedicine, Primary Prevention.

### ABSTRACT

*This article investigates the pervasive issue of insufficient awareness regarding heart disease, a leading cause of morbidity and mortality worldwide. The exploration encompasses the consequences of limited awareness, the factors contributing to this gap, and potential strategies to enhance public understanding. Key themes include the importance of cardiovascular health education, the role of lifestyle choices in heart disease prevention, and the need for targeted awareness campaigns. Aimed at healthcare professionals, policymakers, and the general public, this article seeks to catalyze efforts in addressing the critical knowledge deficit surrounding heart disease.*

**Introduction.** Heart disease continues to be a silent and pervasive threat to global health, with a concerning aspect—insufficient awareness among the public. This article delves into the ramifications of this awareness gap, exploring its roots, impact, and potential remedies to empower individuals to take charge of their cardiovascular health.

Disparities in CVD Burden Based on Sex. In the last thirty years, we have discovered that a significant number of traditional coronary risk factors are specific to or more prevalent in women, and that these factors generally have a more negative impact on women than on men. To be sure, we now know a great deal more about the anatomy, physiology, and symptomatology of women's coronary heart disease. Research on plaques in patients with acute coronary syndrome (ACS) has shown that men are more likely than women to have plaque rupture associated with sudden onset of symptoms. In the context of an ACS, women are still more likely to present with ruptured plaques than plaque erosion; however, autopsy studies have revealed that younger patients have a higher frequency of plaque erosion.

Women who present with ACS have a different burden of atherosclerotic plaque despite having a higher risk factor burden than men; in comparison, women present with fewer non-culprit lesions, smaller luminal areas, thinner fibro-atheroma, and less dense calcium, necrotic core volume, and fibrofatty tissue. Also, sex-specific risk factors for CVD are being increasingly recognized, especially those associated with pregnancy and hormonal influences like early menopause. Preterm delivery, small for gestational age infants, gestational diabetes,



eclampsia, preterm delivery, and other adverse pregnancy outcomes increase a woman's risk of developing CVD later on in life.

Additionally, there are some CVD risk factors that are more common in women, especially those related to autoimmune diseases like scleroderma, systemic lupus erythematosus, and rheumatoid arthritis. Just seven years after a breast cancer diagnosis, cardiovascular disease (CVD) becomes more likely due to breast cancer and its treatment. Owing to these numerous variations, the scientific community understands that in order to lessen the excess burden of CVD in both men and women, efforts should be directed toward prompt recognition of these risk factors and focused primary prevention interventions. The 2019 ACC/AHA Primary Prevention of Cardiovascular Disease Guideline has also emphasized how crucial it is to take into account a woman's pregnancy history when evaluating her risk of CVD and to take into account the risks unique to her sex.

**AHA Advocacy to Improve Awareness of CVD in Women.** In order to assess trends in women's awareness of CVD risk across various racial/ethnic and age groups, as well as their knowledge of symptoms and preventive behaviors/barriers, the American Heart Association (AHA) has been conducting nationwide surveys among US women since 1997.<sup>17, 18</sup> The rate of awareness of CVD as the primary cause of death was almost doubled (from 30% to 56% between 1997 and 2012;  $P < 0.001$ ). Comparable to White women in 1997 (33%), Black and Hispanic women in 2012 had awareness rates of 36% and 34%, respectively.

Women were more likely than men to name cancer as the top cause of death (35% versus 30%) in 1997, but the trend changed to 24% versus 56% in 2012. There were some positive developments in 2013, roughly 15 years after targeted treatments and advocacy campaigns began. Although there has been a noticeable improvement in the understanding of atypical symptoms of CVD since 1997, Black and Hispanic women continue to have a persistent knowledge gap in this area.

The 2019 survey results on the variations in women's awareness of coronary heart disease over a 10-year period are presented by Cushman et al. in this issue of *Circulation*. The survey was only available online and asked questions about knowledge, habits, and awareness of symptoms of coronary heart disease in addition to underlying CVD risk indicators. The use of technology-enabled devices to monitor or improve health was a question that was posed to women, making this survey up to date and indicative of the current trend toward digital patient care.

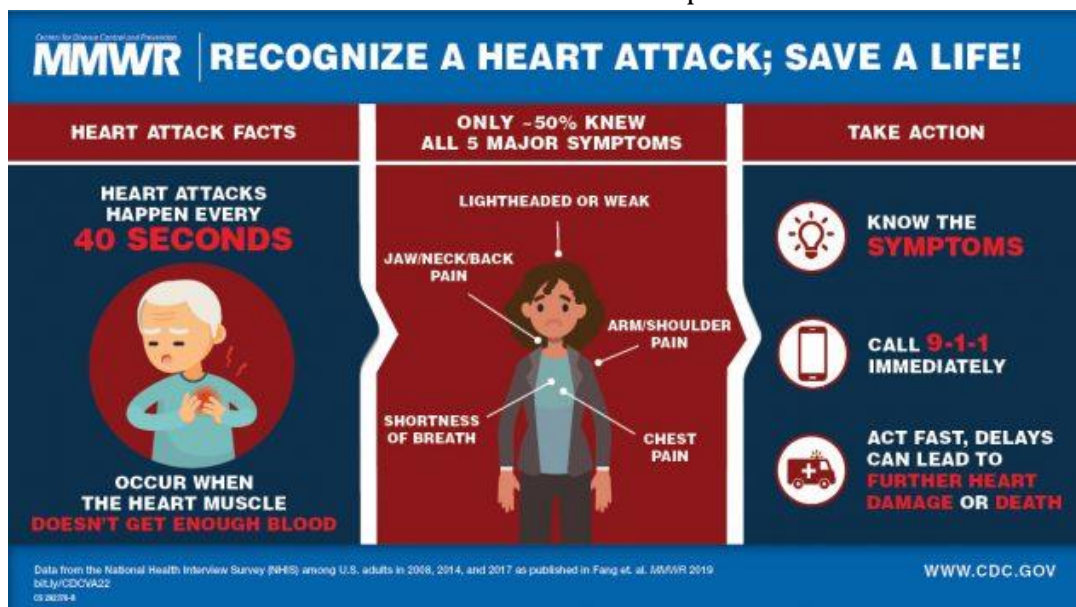
The survey should be commended for the very high rate of response (85%) and including a greater proportion of non-Hispanic Black and non-Hispanic Asian respondents than in 2009. The largest proportion of women reported incomes  $>$  \$100,000, followed by the next largest  $<$  \$35,000, making this sample population more representative of the dichotomous income disparity in the US today.

Researchers, health policy analysts, and clinicians should take into account the survey's findings. First, compared to 2009, fewer women were identified as having heart disease as their primary cause of death (LCOD) (43.7% vs. 64.8%,  $p < 0.05$ ). This decline was especially noticeable in non-Hispanic Black, Hispanic, and Asian women (58%, 59%, and 67% less likely, respectively). The women in the age range of 25 to 34 showed a significant drop in awareness. This represents the most significant takeaway from the manuscript. Despite having the lowest

incidence of CVD, this age group is most in need of early preventive and educational measures. In this group, education and awareness have the power to significantly alter the course of their health.

Second, the fact that fewer people with CVD risk factors, including women who have previously experienced heart disease and stroke, were aware of heart disease as the LCOD is concerning. Women with hypertension knew 30% less than women without the condition, and people with diabetes knew even less than they did in 2009. Last but not least, there was a decrease in the identification of a range of heart attack symptoms. Compared to 2009, fewer women in 2019 recognized the potential warning sign for almost all heart attack symptoms.

A new discussion about providing culturally sensitive care and education, especially to those from the most vulnerable socioeconomic backgrounds, should be sparked by the concerning marked decline in awareness of heart disease as the leading cause of mortality, especially in racial/ethnic minorities, despite decades of educational and advocacy interventions. It is obvious that determining out how social determinants of health affect the risk factors for cardiovascular disease is a crucial first step.



**A Call to Action.** Even with the advancements in public awareness and education over the past 20 years, women's knowledge of CVD remains inadequate. The factors that have long been identified as leading to the gender gap in cardiovascular disease (CVD) need to be reexamined. These factors include a lack of curriculum in cardiovascular training that specifically addresses the risk factors for CVD that are specific to women, a lack of competencies in cardiovascular disease during pregnancy, and ongoing gaps in the medical community's understanding of the pathophysiological differences in CVD in women. Redoubled efforts by advocacy organizations and the scientific community are required to address these factors.

In addition to publishing academic publications on sex-based research, our government agencies and volunteer science organizations ought to keep up their strategically focused research networks in women's cardiovascular health. To enhance our trainees' educational experience, medical institutions should implement Preventive Cardiology programs where women and men with high estimated 10- and 30-year ASCVD risk are seen by



multidisciplinary teams. The impact of race/ethnicity, implicit bias, and social determinants of health on the disparities in cardiovascular disease among men and women shall be covered in greater detail in medical school curricula.

The time has come to offer culturally competent care, and social determinants of health—known risk factors, low health literacy, acculturation, and economic hardships—must be taken into account in a complex equation that improves the risk of disease for underrepresented minorities who reside in at-risk communities. The evidence supporting diagnostic and treatment adherence in the management of CVD in women must be regularly reviewed by our guidelines.

It is necessary to incorporate our clinical guidelines into standard clinical practice. Last but not least, reducing the gender gaps in cardiovascular care and raising public awareness are challenging initiatives that take time to complete. Reorganizing society and stepping up efforts to educate women—especially young women—will be necessary to address this.

Lastly, it's important for both male and female patients, as well as their doctors, to keep in mind the ABCs of prevention. A: Risk assessment, including consideration of risk-enhancing variables and lifetime and 10-year ASCVD risk; Aspirin is rarely recommended for primary prevention when it comes to antithrombotic prescriptions; however, for secondary prevention, the choice is between single and dual antiplatelet therapy. Using a CHA<sub>2</sub>DS<sub>2</sub>-Vasc score, one can determine which patients need to be treated with anticoagulants; B: Normal blood pressure is less than 130/80 mmHg. C: For people who are eligible for treatment, statin therapy is the first line of pharmacologic treatment for cholesterol, and lifestyle optimization is recommended for all; C: Quit smoking (both traditional and electronic cigarettes); D: Diet/Weight Loss – must be made gradually and reviewed at every patient visit; D: Diabetes Prevention/Management; and E: Physical Activity. Being aware of the ABCs of prevention is essential to having good cardiovascular health.

Recognizing the Repercussions: Insufficient knowledge about heart disease results in postponed diagnosis, decreased compliance with preventive measures, and heightened strain on healthcare systems. People could misjudge their own risk, ignore warning indicators, and pass up chances for early intervention.

Factors Contributing to the Awareness Gap: Several factors contribute to the lack of awareness, including inadequate health education, socioeconomic disparities, and cultural beliefs. The article examines these factors, emphasizing the need for tailored strategies that consider diverse populations and cultural contexts.

The Role of Cardiovascular Health Education: Effective cardiovascular health education emerges as a cornerstone in addressing the awareness gap. The article advocates for comprehensive educational initiatives that cover risk factors, preventive measures, and the importance of early detection. This extends to schools, workplaces, and community settings.

Harnessing the Power of Public Awareness Campaigns:

Strategic public awareness campaigns are essential in reaching a broad audience. Leveraging various media channels, these campaigns can disseminate accurate information, debunk myths, and motivate individuals to prioritize heart health.

Empowering Individuals Through Telemedicine: In an era dominated by technology, telemedicine emerges as a powerful tool for reaching individuals in remote or underserved



areas. The article explores how telemedicine can facilitate access to heart health information, consultations, and resources.

**Fostering Cardiovascular Health Literacy:** Promoting cardiovascular health literacy is integral to ensuring that individuals can comprehend and act upon heart health information. The article discusses initiatives that enhance health literacy, empowering individuals to make informed decisions about their cardiovascular well-being.

**Community Health Initiatives and Primary Prevention:**

Community-based programs and primary prevention efforts play a pivotal role in addressing heart disease. The article highlights successful initiatives, emphasizing the importance of local engagement and tailored interventions.

**In conclusion**, the article calls for a concerted effort from healthcare professionals, policymakers, and the community to bridge the awareness gap in heart disease. It outlines actionable steps to improve cardiovascular health education, enhance public awareness campaigns, and leverage technology for widespread impact.

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