

Prioritizing Women's Heart Health: An Urgent Call to Action

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Heart disease is often mistakenly perceived as a predominantly male issue, but the reality tells a different story. Women are equally susceptible to heart-related illnesses, yet they face unique challenges that often go unrecognized.¹ This editorial shed light on the critical need to prioritize women's heart health and calls for urgent action to address the disparities and gaps in care that persist.

Heart disease is the leading cause of death for women globally. It can affect women of any age. Cardiovascular disease is responsible for 35% of deaths in women each year – more than all female cancers death combined.² Nepal has no such study in women and no data available. Despite these global alarming statistics, heart health in women continues to be seriously understudied, under-recognized, under-diagnosed and under-treated. This is primarily the result of various misconceptions, including the widespread view that cardiovascular disease affects men more than it does to the women. Most of the time diagnosis and treatment strategies of cardiovascular diseases have historically been based on research predominantly involving men participants. This has resulted in underdiagnosed, undertreated issues in women's heart health. Females have higher rates of misdiagnosis compared to their male counterparts.³

Some heart disease symptoms in women can differ from those in men, which leads to women being more frequently misdiagnosed, or their symptoms dismissed as anxiety-related. This proved the fact that women continue to be under-represented in clinical trials. This is one of the major reasons why there is insufficient awareness among female patients and their doctors also have lack of sex-specific symptoms and presentations of CVD in females.²

Several other factors also contribute to the disparities in women's heart health. Biological differences, societal perceptions, and symptoms presentation variations are just a few of the hurdles that prevent timely and accurate diagnosis and treatment in female. Women's heart attack symptoms can be subtler and atypical, leading to delayed intervention and poorer outcomes.⁴ Additionally, gender bias in healthcare can further exacerbate these challenges, with women's concerns sometimes dismissed or downplayed.⁵ There is an urgent need for increased understanding of CVD in women among both healthcare professionals and the general public. The more women know about heart disease, the better chance they have of beating it.⁶

There are widespread sex differences in cardiovascular structure and function. The unfortunate misconception that women are at lower risk for CVD, discriminating diagnostic and treatment approaches for women are the major fallacy and concern in the management of women heart health worldwide. So, what do we know about sex

effects and differences in CVD? Women may be more susceptible to develop certain types of CVD at different points in life⁷:

- Rheumatic heart disease is more common in young females.
- Coronary artery disease is on the rise in middle aged women.
- About 40% of heart attacks in women are fatal, and many occur without prior warning. Sadly, the majority of women don't realize it's one of their leading causes of death.
- Pregnancy and heart disease is special condition that women need to go through. Pregnancy increases the overall demand placed on the maternal CV system, which is accompanied by increased blood volume and cardiac output, systemic vasodilation, decreased arterial pressure, and remodeling of the heart and vasculature.
- The risk of preeclampsia in pregnancy is associated with a subsequent increased risk for CVD. Preeclampsia doubles a woman's risk of IHD later in life.
- The Chronic Hypertension and Pregnancy (CHAP) Project found that the risk for developing hypertension can occur as soon as 3 years after a diagnosis of hypertension in pregnancy.
- Peripartum cardiomyopathy occurs in women and can possibly reoccur in subsequent pregnancies.
- Pregnancy and Postpartum condition very special situation in women, they have higher risks of cardiac arrhythmias and are at sex-specific risk for MI due to spontaneous coronary-artery dissection during pregnancy or peripartum.
- Pregnancy and Postpartum condition also considered risk for women to have deep vein thrombosis and pulmonary embolism
- High blood pressure or diabetes during pregnancy can increase a mother's long-term risk of high blood pressure, diabetes and CVD.
- Lactating mother with heart disease who need regular medication issues on drug avoidance, adjustment and optimization.
- Autoimmune diseases related cardiovascular events are also more common in female.
- Women with diabetes are more likely to develop heart disease than men with diabetes.

- Women who smoke are more likely to develop CVD than men who smoke
- Depression can make it difficult to maintain a healthy lifestyle. Stress and depression affect women's hearts more than men.
- After menopause their production of estrogen drops, women are more likely to get heart disease and increase risk of developing other atherosclerotic blood vessels diseases. Women who go through early menopause are twice as likely to develop heart disease as women of the same age who do not.
- Stress-related cardiomyopathy (Takotsubo cardiomyopathy or "broken heart syndrome") is a rapidly reversible form of acute HF characterized by transient apical ballooning. Usually triggered by intensely stressful emotional or physical events, Takotsubo cardiomyopathy overwhelmingly affects women, especially postmenopausal women.
- Life course perspective - Women of all ages should take heart diseases seriously and pay close attention to CVD risk factors and their management.

Bias and Biology- why is heart disease less recognized in women?

- Women tend to develop symptoms of heart disease at a much later stage of the illness than men. Women have more adverse outcomes than do men, despite having less severe obstructive coronary artery disease (CAD) and better systolic function than men, on average, even after adjusting for age.
- Their symptoms are often vaguer or 'non-specific' and atypical. This may be primarily because of abnormal coronary reactivity, microvascular dysfunction, and vascular plaque erosion with distal microembolization. This is the strong predictor of female-typical pattern of CAD which differs from the male-typical pattern of CAD.
- Vascular reactivity underlies several disorders that disproportionately affect women, such as migraine headaches, autoimmune arteritis, Raynaud phenomenon and microvascular angina.
- Some diagnostic tests for heart disease are less accurate in women than in men
- Women are less likely to seek help quickly because of many socio-cultural reasons.
- Unfortunately, some health professionals are less likely to check and consider possibilities of women heart disease seriously.³

Every cell has a sex.⁸ Historically, many researchers have not incorporated that concept into investigations or their reporting of results. The sex differences are present in types of cardiovascular diseases experienced, risk factors, responses to treatments, and clinical outcomes. This highlights the need to incorporate analysis of sex differences at all levels of investigation, but particularly in evaluation of genetic contributions to disease and response to treatment. If these analyses are done consistently, improvements may be achievable in targeting optimal diagnostic, preventive, and treatment protocol women and men. It's crucial to recognize that women's heart health needs a tailored approach—one that considers their unique risk factors, symptoms, and responses to treatment. Healthcare providers must undergo specialized training to recognize

and address heart disease in women effectively. Increased awareness campaigns and public education initiatives can help dispel myths, raise awareness, and empower women to take charge of their heart health.³

Empowering women to advocate for their health is paramount in the fight against heart diseases. Encouraging regular heart screenings, promoting a healthy lifestyle, and fostering open conversations about heart health can have a significant impact in preventing heart-related issues in females. Women must be informed, engaged, and proactive participants in their cardiovascular care.

There should be mandatory diversity in medical community to reflect the diverse population being served. One of the biggest problems for women with heart disease can be finding a doctor who will understand what the women are going through. In the medical workforce there are not enough women entering especially in the field of cardiology. If you're a male taking care of a female, you may have a bias that women are more dramatic about their symptoms or don't have as big a heart problem. But if you are a woman taking care of a woman, you may listen differently. The truth and fact are, if a medical team member looks like the person they are treating, there's more trust and bonding. The patient will share more of their problems and is more likely to stick to the treatment plan.

In the world scenarios there is a huge gap in terms of women heart health and even worse in low to middle income countries like Nepal. To bridge the existing gaps in women's heart health, collaborative efforts from healthcare professionals, governmental authority, policymakers, researchers, and the broader community are essential. We must prioritize gender-specific research, ensure equitable access to healthcare services, and challenge existing norms to create a healthcare system that truly supports the heart health of all individuals, regardless of gender. Women's heart health is not a secondary concern, it is a pressing issue that demands immediate attention and concerted efforts, by shedding light on the disparities and challenges faced by women.

The work of incorporating sex and gender into the research—and, more broadly, into clinical practice—is in its initial stages. More needs to be done. This is critical for understanding how sex differences affect heart health and for the development of safe and effective treatments for everyone.

An old proverb says- the best time to plant a tree is ten years ago and the second-best time is today. There's no better time like the present to begin a healthy lifestyle to win the battle on health. Changes takes time, so start early, much earlier in life, I'm a big believer that it should start in kindergarten.

However, there are many steps we can take to protect women heart health right now. Here's what we can do:

- Be more physically active.
- Eat a healthy diet. Maintain healthy weight, Avoid psychological stress.
- Don't smoke, avoid secondhand smoke and other addictive substances.
- Get the right amount of sleep; 6 to 8 hours of sleep is needed by most people.
- Identify ways to better manage stress, biological factors that

seem to be common to both mental and cardio-metabolic diseases. Emerging data indicate that younger women may be particularly susceptible to mental stress-induced myocardial ischemia.

- The good news is that most of the problems in pregnancy are preventable, meaning you can take steps before, during, and after pregnancy to help your heart health.
- During your annual checkup, ask your doctor for your “numbers”—blood pressure, lipids, glucose, and body mass index—and ask him or her to explain your results and whether you need to make changes in your lifestyle.
- You should know your own body, so be persistent. Get a second opinion if you feel something is wrong and your doctor isn't addressing your concerns.
- Consider participating more women in clinical research to help others and contribute to moving science forward.
- To learn how to be healthy, talk to your doctor or visit your health care provider.

For the women heart health- medical professionals as well as family, friends, and coworkers can help you reach along the road to better health. It's easier to change when you have social support also. It's never too late to protect your heart's health, for yourself and your loved ones.

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