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From Clinics to Communities: Precision Prevention for Cardiovascular Health in South Asians

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Introduction

Cardiovascular disease in Asian Americans represents a paradox of increasing demographic prominence yet persistent scientific underrecognition. Despite being one of the fastest-growing populations in the United States, Asian Americans remain underrepresented in cardiovascular research and poorly characterized in risk prediction frameworks [1,2]. This underrepresentation is especially problematic as "Asian American" is not a clinically uniform category but rather encompasses diverse subgroups with meaningfully different cardiovascular risk profiles, disease trajectories, and responses to prevention. When these populations are analyzed in aggregate, or excluded altogether, important differences in burden, response, and mechanism are obscured.

Proportionate mortality from hypertensive heart disease and cerebrovascular disease is higher across all Asian American subgroups compared with non-Hispanic White adults, yet ischemic heart disease burden is especially elevated among South Asian individuals (those with ancestral origins in South Asia including India, Pakistan, Bangladesh, Sri Lanka, Nepal, Bhutan, and the Maldives) [3,4]. Similarly, epidemiologic data demonstrate marked heterogeneity with higher odds of coronary heart disease among Filipino and South Asian populations and lower prevalence among Chinese individuals [5]. Across subgroups, the prevalence of mortality attributed to type 2 diabetes and stroke exceeds that of non-Hispanic White adults, with the highest atherosclerotic cardiovascular disease (ASCVD) risk among South Asian and Filipino individuals [2]. Among all Asians living in the United States, South Asians experience particularly elevated risks of premature ASCVD, often manifesting at younger ages and lower body mass indices [1,6,7]. Collectively, these observations underscore a critical limitation of conventional prevention paradigms, which frequently fail to account for the unique biological, cultural, and environmental determinants of cardiovascular risk in this vulnerable population. Addressing these gaps will require a more nuanced understanding of the factors driving cardiovascular disparities as well as targeted approaches to prevention and care. In this commentary, we examine the implications of the Jain Wellness Initiative for cardiovascular prevention among South Asians, discuss limitations of current risk assessment paradigms, review emerging culturally tailored prevention strategies, and highlight priorities for future research and clinical practice.

The Jain Wellness Initiative: Lessons from a Community-Based Prevention Model

In this context, the Jain Wellness Initiative represented an important contribution, advancing a community-centered approach to cardiometabolic risk reduction in South Asians [8]. By leveraging a faith-based setting and designing a multimodal intervention in partnership with community members, the leaders of this initiative moved beyond traditional clinic-based strategies toward a culturally embedded model of prevention [8]. This approach aligns with established cardiovascular health frameworks while incorporating culturally concordant elements such as dietary adaptation, yoga, and meditation, approaches that have been shown to improve acceptability, engagement, and sustainability in South Asian populations [9]. Importantly, the demonstration of high participant engagement and self-reported behavioral change highlights that initiatives such as this one may be feasible in real-world settings. In an era marked by physician workforce shortages and widening disparities in preventive care, scalable, community-driven models may represent

potential avenues for improving cardiovascular health equity. Despite the strengths of this study, several limitations warrant consideration. The single-arm design and lack of a control group limit causal inference, making it difficult to determine whether improvements were attributable to the intervention itself or to other factors. Selection bias may have also been introduced through voluntary participation within a faith-based community, as enrolled individuals may have been more health-conscious, motivated to engage in preventive behaviors, or otherwise unrepresentative of the broader South Asian population. Furthermore, the 6-month follow-up period limits assessment of the long-term sustainability of behavioral changes and cardiometabolic improvements.

Improving Cardiometabolic Risk Assessment in South Asians

The findings from the Jain Wellness Initiative also highlight the complexity of cardiometabolic risk modification in South Asian populations. Reductions in body mass index (BMI), waist circumference, and hemoglobin A1c were juxtaposed with less favorable and discordant increases in systolic and diastolic blood pressure measurements. This discordance is instructive rather than incidental. There is growing literature raising important questions about the adequacy of conventional metrics such as BMI as proxies for risk reduction in South Asians [8]. These findings are supported by well-described pathophysiologic features of South Asian populations, including disproportionate visceral adiposity, ectopic fat deposition, and metabolic dysfunction despite lower BMI [6,10]. The MASALA and MESA studies demonstrated that South Asians had higher levels of visceral fat, intermuscular fat, and hepatic fat, yet lower BMI and lean muscle mass compared with other racial/ethnic groups [11]. Accordingly, BMI is likely poorly calibrated for this population and may substantially underestimate cardiometabolic risk.

Alternative measures of adiposity may provide more accurate assessments of metabolic risk in South Asian populations [12]. In the CARRS study which included nearly nine thousand adults in three major South Asian cities, waist circumference and waist-to-height ratio were the most useful indices for identifying prevalent diabetes and hypertension, with waist-to-height ratio trending toward the best discriminatory performance (AUC 0.77–0.80 for diabetes) [13]. Similarly, the international INTERHEART study further demonstrated that elevated waist-to-hip ratio carries an increased risk of acute myocardial infarction in South Asians, with higher population-attributable risks from elevated waist-to-height ratio contributing to higher rates of cardiovascular disease in this group [9].

Despite these advances, alternative measures were also discordant with blood pressure alterations in the Jain Wellness Initiative [8]. That mismatch suggests that short-term improvements in anthropometrics may not fully capture vascular risk, and that different cardiometabolic domains may respond on different timescales. Beyond anthropometrics, a greater emphasis on early glycemic markers, atherogenic lipid profiles, and imaging-based modalities examining visceral fat distribution may better capture the underlying pathophysiology of ASCVD in South Asians. Collectively, these observations suggest the need to move beyond simplified, weight-centric frameworks toward multidimensional and tailored approaches to cardiovascular risk assessment.

Culturally Tailored and Community-Based Prevention Strategies

Equally important is the recognition that effective interventions may further benefit from cultural concordance to achieve meaningful and sustained behavior change. A growing body of literature in addition to the Jain Wellness Initiative demonstrates that community-based and culturally tailored interventions may produce measurable improvements in cardiometabolic health among South Asians. For instance, the Kaiser Permanente Heart Health for South Asians (HHSA) program has demonstrated durable improvements in cardiovascular risk factors through culturally adapted education and lifestyle modification [14]. Similarly, interventions such as the SAHELI study and programs conducted among Sikh Asian Indians in New York City have shown improvements in weight, glycemic control, blood pressure, and health behaviors through integrated approaches combining nutrition counseling, physical activity, and stress reduction [9]. Notably, culturally adapted physical activity interventions including cultural dance (e.g., Bollywood, Bhangra, or Bharatanatyam) or yoga may be more familiar and sustainable than traditional gym-based exercise [9]. Dietary strategies may also benefit from cultural alignment; intermittent fasting approaches such as time-restricted eating may improve insulin sensitivity and resonate with traditional or religious fasting practices among South Asian communities [15]. However, successful implementation of these programs often depends on strong community partnerships, culturally competent personnel, and sustained participant engagement, factors that may be challenging to replicate across diverse practice settings. Moreover, scaling culturally tailored interventions beyond individual institutions of geographic regions will likely require dedicated funding mechanisms, standardized implementation frameworks, and continued evaluation to ensure long-term effectiveness and sustainability.

Faith-based and community-centered models represent a potential platform for delivering these interventions. Institutions such as temples, mosques, churches, and gurdwaras serve not only as places of worship but also as hubs of social

cohesion and trust, enabling culturally concordant messaging and sustained engagement [16,17]. The US National Lipid Association recently explicitly recommended implementing screening programs and preventive interventions among South Asians within these community settings [18]. Large-scale initiatives conducted through organizations such as the Sarva Mangal Family Trust or BAPS Charities demonstrate the scalability of volunteer-led health promotion programs across North America [8,18]. Nevertheless, reliance on volunteer leadership and community resources may present challenges for long-term sustainability, particularly in underserved regions with fewer organizations or financial resources. Future efforts should focus on developing sustainable partnerships among healthcare systems, public health agencies, insurers, and community organizations to support program infrastructure and facilitate broader dissemination. The effectiveness of such interventions must also be considered within the broader context of acculturation, which exerts complex and heterogeneous effects on cardiovascular risk. Greater acculturation has been associated with higher cholesterol levels and increased consumption of ultra-processed foods among Asian Americans, potentially offsetting traditional protective behaviors [19,20]. Prevention strategies for South Asian communities and South Asian diaspora must therefore be culturally grounded without assuming cultural staticity; they must adapt to migration, generational change, and evolving dietary and behavioral norms.

Future Directions and Conclusions

Taken together, these observations underscore an unmet need for cardiovascular research, risk assessment, and prevention strategies that are specific to South Asians. Clinicians and public health practitioners should recognize that conventional metrics such as BMI may underestimate risk in South Asian populations, and multidimensional measures including central adiposity, glycemic markers, and lipid profiles should be integrated into routine assessment. In clinical practice, this may include earlier screening for diabetes and dyslipidemia, routine measurement of waist circumference or waist-to height ratio, careful assessment of family history of premature ASCVD, and heightened vigilance for cardiometabolic risk even among individuals with normal BMI. Additionally, the adoption of community- and faith-based interventions that leverage cultural practices, social cohesion, youth engagement, and trusted institutions may promote more sustainable changes in lifestyle [17,21]. Future research should focus on developing and validating South Asian-specific cardiovascular risk prediction models, identifying alternative risk markers that improve risk stratification beyond traditional measures, and evaluating the effectiveness, scalability, and long-term sustainability of culturally adapted prevention programs. Greater inclusion of South Asian participants in prospective cohort studies and clinical trials may also be beneficial in characterizing disease mechanisms, refining preventive strategies, and informing evidence-based guidelines tailored to this population.

By combining precise, population-tailored risk assessment with culturally concordant prevention strategies, we may more effectively reduce the disproportionate burden of cardiometabolic disease among South Asians and advance cardiovascular health equity across diverse global subgroups. The broader lesson extends beyond one population: precision prevention will remain incomplete if it is biologically informed but socially generic. For South Asians, effective cardiovascular prevention must be both clinically precise and culturally situated.

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