

## Strengthening Clinical Cardiovascular Care Through Disparity-Specific Education

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### To the Editor:

We appreciate the thoughtful commentary provided Ms Wongpaiboon and colleagues in response to our article on the underrepresentation of sex-specific differences in myocardial infarction (MI) presentations within commonly-used medical education resources. We are encouraged by their support for our findings and for their efforts to further emphasize the multifaceted nature of disparities in cardiovascular care for females.<sup>1</sup>

Ms Wongpaiboon et al highlight a critical and complementary perspective: educational interventions should not only address didactic content but also incorporate active and experiential learning through standardized patient exercises, clinical exposure, and case-based instruction. We fully agree with the recommendation to integrate training modules that highlight the prevalence of nonobstructive coronary artery disease and microvascular dysfunction in females, as well as the need for clinicians-in-training to recognize that fatigue, dyspnea, nausea, and other nonclassic symptoms may signal an evolving MI in female patients.

Additionally, the authors bring attention to the nuanced interpretation of electrocardiographic findings and high-sensitivity troponin assays in females.<sup>2</sup> We agree that the interpretation of diagnostic tools through a sex-specific lens is essential and must be emphasized early in medical training. As they note, sex-based thresholds for cardiac biomarkers and differential EKG patterns in females remain underutilized in clinical practice, and the failure to incorporate these nuances contributes to diagnostic delay and poorer outcomes.

While our original study was designed to identify curricular deficiencies in widely used USMLE Step 1 study materials, we concur that the issue extends well beyond preclinical education. The persistent gaps in clinician awareness, diagnostic accuracy, and therapeutic management underscore the need for a longitudinal, system-wide approach to sex- and gender-informed medical education. This should include curriculum reform at the undergraduate medical education level, as well as continued education for residents and practicing clinicians.

We are grateful to the authors for reinforcing the urgency of this issue and for proposing concrete, actionable strategies to mitigate disparities. As MI remains a leading cause of morbidity and mortality in females with outcomes that continue to lag behind those of males, education must serve as a key lever for change. We hope this dialogue fosters continued collaboration toward building a medical education infrastructure that reflects the clinical realities faced by our patients.

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