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PREPRINT (as submitted):

Letter to the Editor on the “Core Components of Cardiac Rehabilitation Programs: 2024 Update: A Scientific Statement From the American Heart Association and the American Association of Cardiovascular and Pulmonary Rehabilitation”

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We congratulate Brown et al. on their recent publication in *Circulation* regarding the 2024 update on the core components of cardiac rehabilitation (CR) programs.¹ We praise the inclusion of the new core component, “program quality,” for its potential to enhance outcomes. Among the main challenges of CR, low levels of enrollment and participation are highlighted in this Scientific Statement, and the “program quality” component aims to address this issue.¹ We also emphasize that it specifically addresses depression improvement as one of the key patient-level performance measures.¹

Evidence suggests that enrollment and adherence problems are primarily driven by psychosocial factors.² Our comments focus on depression and cognitive impairment (CI) – two major issues in light of recent evidence on the link between heart and brain.^{1,3}

Depression is common in patients with cardiovascular diseases (CVDs)^{1,3} and has a significant negative impact on their clinical outcomes.¹ We fully support the 2024 update’s approach to assessing depression through validated screening tools or interviews, as outlined in the core component “psychosocial management.”¹ We would like to go further and argue that clinicians should start by asking simple open-ended questions about the patient’s current mood and pleasure in things, the core features of depression. Then, if one responds affirmatively to “Have you been feeling sad most of the time?” and “Have you lost interest in activities that you usually find enjoyable during the past weeks?” (no more than the 2-item version of the Patient Health Questionnaire by Spitzer et al.), there is a high likelihood of depression warranting further assessment. In settings where resources are limited and multidisciplinary teams scarce, such simple approaches integrated into everyday practice may be a step forward in identifying depression, one of the noble goals of the 2024 update.

Regarding CI, evidence suggests a nonlinear increase in white matter hyperintensities in healthy individuals without known CVDs as they age, with an inflection point around age 43, associated with cognitive dysfunction.⁴ These imaging findings are typically observed in older adults with cognitive disorders and CVDs.^{3,4} Therefore, it is unsurprising that up to 50% of patients in CR present cognitive

disorders.⁵ These are largely attributable to the interplay between CVD and neurodegenerative processes, resulting in a cycle of emotional distress, cognitive dysfunction, and disability.³ Aging, and perhaps more significantly CI, represent major barriers to the success of CR programs.^{1,2,5} We strongly endorse the 2024 update's recommendation to evaluate cognitive function as part of the core component "patient assessment".¹ This is crucial in addressing clinically significant CI – much underdiagnosed despite its prevalence in patients with CVDs,³ particularly those undergoing CR.⁵ Notably, feasible and valid cognitive screenings are needed to overcome the pitfalls of using instruments less sensitive to cases of executive dysfunction without major memory impairment. Brief tools like the Montreal Cognitive Assessment may be useful for this purpose and can be administered by trained non-medical staff in the CR setting.^{3,5}

Overall, we commend the emphasis placed on addressing mental health and cognitive disorders in the 2024 update.¹

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