Can Interventions on Socioeconomic Status Improve Cardiovascular Health? Role for American Heart Association's Life Simple 7

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In this issue of *Global Heart*, Foraker et al. [1] report on the Jackson Heart Study on the relation of individual and neighborhood socioeconomic status (SES) on cardiovascular (CV) health measured by American Heart Association's Life's Simple 7 (LS7) components of CV health. They found individual (in particular) as well as neighborhood SES to be independently associated with CV health when SES was measured by either income or educational level.

The LS7 includes the modifiable health behaviors and risk factors of body mass index, cholesterol, blood pressure, smoking status, fasting glucose, physical activity, and diet. Studies have shown the number of ideal factors to relate directly incident CV disease and mortality [2–4]. A patient-friendly risk assessment tool, called My Life Check enables participants to enter their relevant information on each of these measures and obtain a written report with advice on how to modify areas of CV health needing improvement. This can be a powerful tool for behavioral change and health care providers should recommend it to their patients.

In the study by Foraker et al. [1], the association found between SES and LS7 in the well-characterized Jackson Heart Study cohort of African Americans is proposed as a possible mechanism for the well-known disparities in CV disease incidence that have been observed in African Americans. The authors point out important limitations to the data such as the fact that they do not capture potentially important underlying neighborhood factors such as access to preventive care, racial discrimination, or social support, which could pay a role in the mechanistic pathway proposed. Importantly, one should also note that the findings are cross-sectional in nature; it would have been desirable to examine whether low income or education might result in a poorer (or worse) trajectory in CV health from longitudinal measures such as by comparing in CV health from baseline to future follow-up. Moreover, examining whether the extent to which any relationships of income or education level to future CV event risk in the Jackson Heart Study cohort might be mediated by LS7 scores would have been an even more ideal way to test the authors' hypothesis. In addition, while Foraker et al. [1] presented the cumulative LS7 score as the outcome in all analyses, understanding whether certain factors such as diet or exercise habits (or cholesterol or blood pressure) might be the prime drivers of the relationships found would have been helpful. Moving forward, it would be important to examine in a longitudinal design whether increases in an individual or neighborhood's income level or neighborhood's education level actually would relate to improvements in CV health such as that measured by LS7 scores, which would presumably relate to reductions in future CV event risk.

Nevertheless, the practical value of applying a tool such as the LS7 or My Life Check tool to helping to educate populations at risk of CV disease, and in particular those from disadvantaged backgrounds, in which there has been limited use of the tool, cannot be understated. Translation of the online tool into different languages beyond English and Spanish would be especially beneficial for reaching out to global populations. Further, collaborations among the American Heart Association, World Heart Federation, and CV and public health societies and groups that have direct outreach to not only the public, but also health care providers can help to better disseminate this as well as other electronic health assessment and intervention tools that have the potential to improve community health. The study by Foraker et al. [1] is a useful advance into helping us understand how a person's CV health might help explain disparities in SES and CV disease incidence in socioeconomically disadvantaged populations, but clearly, prospective investigations to examine whether changes in SES or interventions to improve SES may impact on changes in CV health, and whether this, in turn, translates into reduced CVD outcomes, would be ideal.

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