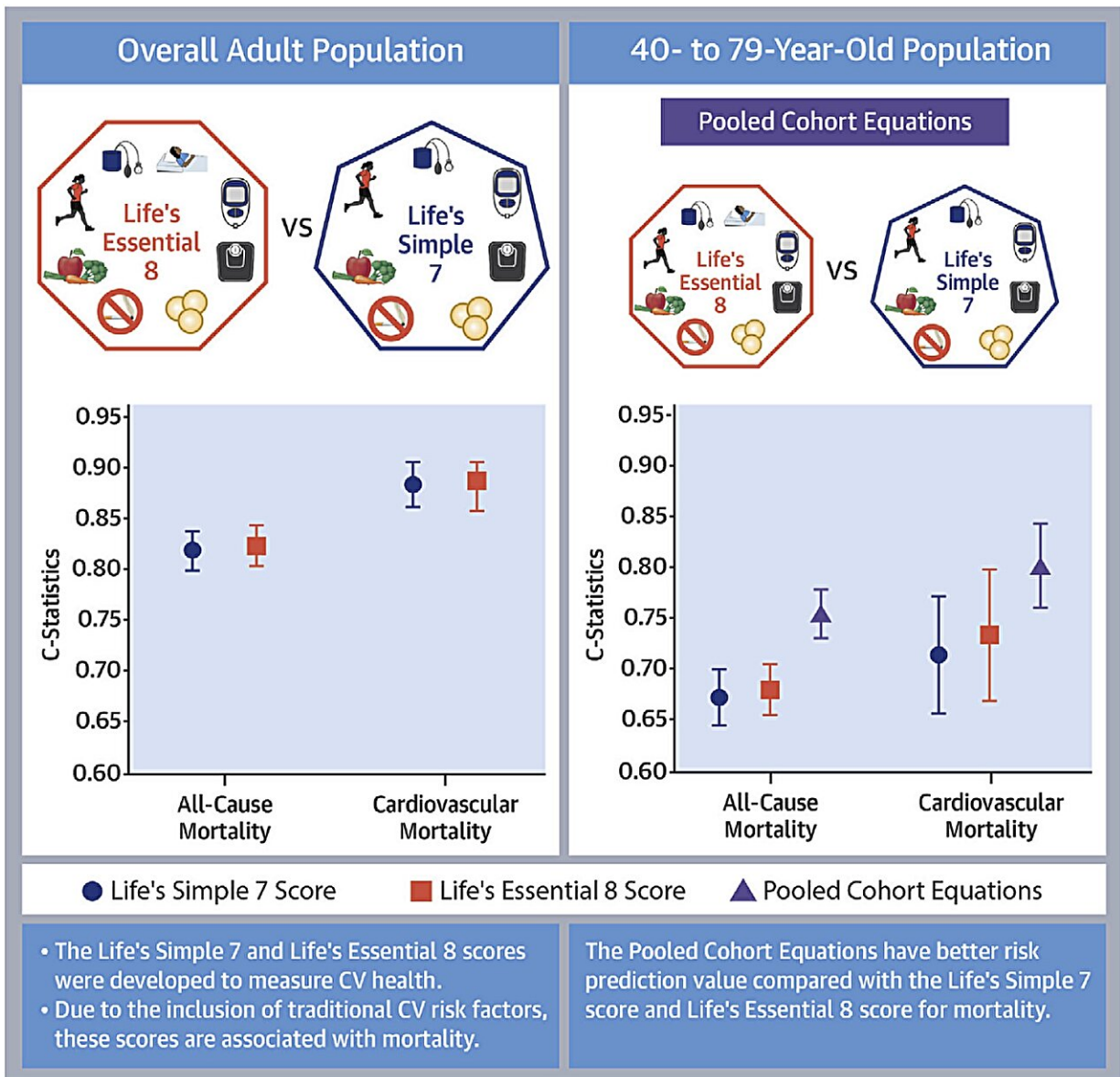


New study evaluates cardiovascular health scores in predicting mortality risks

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Credit: *JACC: Advances* (2024). DOI: 10.1016/j.jacadv.2024.100945

Physician-scientists from the University of Alabama at Birmingham Marnix E. Heersink School of Medicine have conducted a nationwide study evaluating the predictive value of cardiovascular health scores for mortality.

Their [study](#), recently published in *JACC: Advances*, compares two cardiovascular health metrics developed by the American Heart Association—Life's Simple 7 (LS7) and its updated version, the Life's Essential 8 (LE8)—to the well-established Pooled Cohort Equation recognized by the American College of Cardiology.

In 2022, the AHA recognized sleep as a vital determinant of cardiovascular health. Therefore, the prior cardiovascular health metric, the LS7 score, was revamped into the LE8 with the inclusion of sleep as a critical health component.

"This marked a significant evolution in our approach to measuring cardiovascular health," said Naman S. Shetty, M.D., lead author of the study and research fellow in the UAB Division of Cardiovascular Disease. "This research delves into the comparative predictive validity of these tools for [mortality](#), providing a thorough analysis relevant for clinicians and patients."

The study questions whether these cardiovascular health scores should be used for mortality risk prediction by comparing them with a validation risk prediction tool, the PCE.

The research utilized extensive national population-level data from the National Health and Nutrition Examination Survey from 2007 to 2018, a

biennial survey that is conducted to assess the health and nutrition status of the United States population by examining a carefully selected group of individuals who represent the national population.

"This comprehensive dataset of approximately 22,000 participants allowed the researchers to determine the predictive capacities of these health scores to a population of approximately 157 million U.S. individuals," said Mokshad Gaonkar, the biostatistician leading the analysis for the project and statistician at UAB.

"The value of the NHANES is further enhanced by the linkage of participant data to the National Death Index, which allowed the research to examine the outcomes of all-cause and cardiovascular mortality."

The researchers found that LE8 and LS7 scores offered similar predictive values for both of their study outcomes, all-cause and cardiovascular mortality. However, the PCEs outperformed the LE8 and LS7 scores in their mortality risk prediction value.

"Apart from including the [cardiovascular risk factors](#), the PCEs integrate demographic factors such as age, sex and race and also provide separate risk estimation algorithms based on sex and race," Shetty said.

"Furthermore, the PCEs also incorporate weights for each cardiovascular risk factor to accurately reflect the increase in risk of cardiovascular outcomes with changes in the risk factors. Our results underscore the PCE's enhanced utility in clinical environments, where precise risk assessment is critical to effective patient management and treatment planning."

Pankaj Arora, M.D., the senior author and a cardiologist at the UAB Cardiovascular Institute, emphasized the broader implications of their findings.

"The LE8 and LS7 scores are invaluable for broad public health surveillance and interventions aimed at enhancing community health outcomes," Arora said. "However, when it comes to individual risk assessment in [clinical practice](#), the current study highlights the comprehensive nature of the PCE, which makes it a superior choice due to its nuanced approach to mortality risk prediction.

"Therefore, the study calls for a shift of research efforts away from assessing the risk prediction value of the LE8 and LS7 scores and focusing on their intended use of characterizing and tracking cardiovascular health."

More information: Naman S. Shetty et al, Association of Life's Essential 8 and Simple 7 Scores With Mortality, *JACC: Advances* (2024). [DOI: 10.1016/j.jacadv.2024.100945](https://doi.org/10.1016/j.jacadv.2024.100945)

Provided by University of Alabama at Birmingham

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