

# Cardiac rehab attendance lower among Asian, Black and Hispanic adults at all income levels

June 22 2022

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Participation in cardiac rehabilitation is low among Asian, Black and Hispanic adults compared to white adults, with significant disparities by

race/ethnicity regardless of income, according to new research published today in the *Journal of the American Heart Association*.

Cardiac [rehabilitation](#) programs combine physical activity with counseling about healthy living and stress reduction to help improve recovery after a major cardiovascular event, such as a heart attack, [heart failure](#), [heart surgery](#) or angioplasty. Cardiac rehabilitation is proven to be an effective method to for reducing recurrent cardiac events among people who have had a heart attack, heart failure, heart surgery or coronary intervention including angioplasty. A previous meta-analysis found that cardiac rehabilitation decreases the chances of death following a heart attack, or bypass surgery by about 25% and hospital re-admissions by 18%.

In this study, researchers reviewed [health insurance](#) claims data for more than 107,000 people across the U.S. who had diagnoses and/or procedures designated for cardiac rehabilitation. The data came from Optum Clinformatics Data Mart, an administrative database including inpatient, outpatient, emergency department, pharmacy and lab health claims for people with commercial health insurance and Medicare Advantage (C and D). The average age of the people who met the criteria was 70 years; 37% were women; and 76% were white adults, while 2.5% were Asian race, 9.8% were Hispanic ethnicity, and 11.8% were Black race. Each person had experienced one or more of the following cardiovascular events between 2016 and 2018: a [heart attack](#), bypass surgery, heart valve repair or replacement surgery, or angioplasty. Annual [household income](#) was estimated and validated from surveys of U.S. households using a comprehensive set of variables that encompass ZIP code data, Internal Revenue Service data, address-level home value, accumulated credit and short-term loans. Among all participants, 34.2% had a [high school diploma](#) or lower education level, and 31.5% had an annual household income of less than \$40,000. Black individuals were most likely to have a history of high blood pressure, ischemic stroke or

other chronic health conditions.

The study evaluated racial and ethnic differences in cardiac rehabilitation participation to determine if household income may affect attendance in cardiac rehabilitation programs.

Researchers found:

- Overall, only about 26% of all study participants attended one or more cardiac rehabilitation sessions, which included 29.6% of the [white individuals](#), 22.5% of the Asian individuals, 17.6% of the Black individuals and 14.4% of the Hispanic individuals.
- After adjusting for age, sex, hypertension, diabetes, depression, [ischemic stroke](#), income and education, the probability of attending cardiac rehabilitation was 31% lower among Asian individuals, 19% lower for Black individuals and 43% lower for Hispanic individuals compared to White individuals.
- Compared to white individuals, the time to attendance in the first cardiac rehabilitation session averaged 9 days longer for Asian and Black people and 10 days longer for Hispanic people.
- Asian, Black and Hispanic individuals were overall less likely to attend cardiac rehabilitation at all income levels compared to white adults: ranging from 53% less likely among Hispanic people with an annual household income of \$60K—\$75K; to 13% less likely among Black people earning more than \$100K annually.

"Disparities in cardiac rehabilitation participation have been well-documented; however, it is alarming to see the magnitude of the disparities that persist," said Joshua H. Garfein, M.P.H., co-lead study author and a medical student at the University of Pittsburgh. "We were surprised to find that the racial or ethnic disparities did not decrease at higher income levels, which means we need to do more research to

identify the barriers."

New initiatives are urgently needed to optimize the secondary prevention benefits of cardiac rehabilitation and promote equitable cardiovascular outcomes, researchers said.

"Clinicians should promote cardiac rehabilitation for all eligible patients after a major cardiac event or diagnosis and be aware of the factors that may make it more challenging for some people to participate," said senior study author Jared W. Magnani, M.D., M.Sc., an associate professor of cardiology at the University of Pittsburgh's Center for Research on Health Care.

"Future studies should evaluate how other social variables—such as the ability to understand health information, the number of people in a household or employment status—may contribute to disparities in cardiac rehabilitation participation," Magnani said. "In addition, addressing these disparities will require continued research into new initiatives that may help to increase participation in cardiac rehabilitation programs. Several options include automatic referral, virtual delivery options, development of rehabilitation facilities in underserved or rural areas, community-based cardiac rehabilitation, evening programs and home-based programs."

The study had several limitations. Race or ethnicity was detailed in the health insurance claims data, and income and education levels were determined by ZIP code and geographic indicators. Additionally, the insurance data examined is for reimbursement purposes, therefore, diagnostic information may have been incomplete. Participants with less than 90 days of insurance enrollment were omitted from the analysis, as well as individuals with missing information, therefore, selection bias may have occurred. The researchers also note that the study only included insured individuals, therefore, the results may underestimate

the correlation between low income and cardiac rehabilitation participation.

The American Heart Association supports congressional legislation such as the bipartisan "Increasing Access to Quality Cardiac Rehabilitation Care Act" that would expand cardiac rehabilitation resources.

"Studies show that participation in cardiac rehabilitation and prompt initiation of cardiac rehabilitation after hospitalization improve patient outcomes," said Randal J. Thomas, M.D., a past chair of the American Heart Association's Council on Clinical Cardiology and a professor of medicine in the Mayo Clinic Alix School of Medicine who works with the Mayo Clinic Cardiac Rehabilitation Program in Rochester, Minnesota. "The proposed legislation would be one more tool available to improve referral to and participation in cardiac rehabilitation services by accelerating the timetable for enabling physician assistants, nurse practitioners and clinical nurse specialists to order and supervise [cardiac rehabilitation](#)."

Other co-authors are co-lead author Emily N. Guhl, M.D., M.S.; Gretchen Swabe, M.S.; Akira Sekikawa, M.D., Ph.D.; Emma Barinas-Mitchell, Ph.D.; and Daniel E. Forman, M.D. Authors' disclosures are listed in the manuscript.

**More information:** Cardiac rehab attendance lower among Asian, Black and Hispanic adults at all income levels, *Journal of the American Heart Association* (2022). [DOI: 10.1161/JAHA.122.025591](https://doi.org/10.1161/JAHA.122.025591)

Provided by American Heart Association

Citation: Cardiac rehab attendance lower among Asian, Black and Hispanic adults at all income

levels (2022, June 22) retrieved 26 April 2024 from  
<https://medicalxpress.com/news/2022-06-cardiac-rehab-asian-black-hispanic.html>

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