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TURNING SCIENCE INTO ACTION

Racial and Ethnic Differences in Cardiac Rehabilitation Participation: Effect Modification by Household Income

The following is a synopsis of "Racial and Ethnic Differences in Cardiac Rehabilitation Participation: Effect Modification by Household Income" published in June 2022 in the *Journal of the American Heart Association*.

What is already known on this topic?

Cardiac Rehabilitation (CR) activities benefit individuals recovering from a heart attack, heart failure or other cardiovascular events by intervening to provide supervised, structured physical activity and promotion of healthy behaviors through counseling.

If CR is completed within the first year, an estimated 12,000 deaths and 87,000 hospitalizations could be avoided in addition to reducing symptoms and improving quality of life.[1]

However, only 20% to 30% of eligible individuals receive treatment.[2] Reasons behind this large gap in treatment uptake include health system issues like weak recommendations or lack of referral for CR from physicians and large time intervals between discharge and initiation of CR; an individual's enrollment and adherence to CR can be impacted also by the lack of CR program availability in their area, required insurance co-payments, financial burdens from missing work, transportation barriers and cultural considerations.[2,3]

Larger enrollment gaps in CR participation are reported in people from racial and ethnic minority groups and people with lower household incomes.[3–5] Improvements in equitable referral and enrollment strategies are critical to increase participation in CR programs, advance secondary prevention of cardiovascular events, and decrease subsequent death.[2,5]

Although there are continued efforts to better understand and address these disparities, more research is needed to examine how household income impacts the associations between race or ethnicity and CR participation.[5]

What is added by this article?

The study examines the association between race or ethnicity and CR participation as well as how household income modifies these associations within a sample of both privately and publicly insured US individuals. The study examined claims data from 107,199 deidentified individuals with a CR-qualifying diagnosis included in Optum's Clinformatics database between January 1, 2016 and December 31, 2018. Estimated household income (based on zip code, Internal Revenue Service data, address home value, aggregated credit, and short-term loans) were grouped into five categories (<$40 000; $40 000–$59 999; $60 000–$74 999; $75 000–$99 999; and ≥$100,000).

In the analysis of race or ethnicity and CR participation, the study found that relative to White persons, Asian (31%), Black (19%) and

Hispanic (43%) persons all had a lower probability of attending CR with more apparent differences in those that were aged 65 or older.

Of those that did participate in CR, the number of sessions attended averaged around 15.3 sessions; there was significant differences in sessions attended by race and ethnicity. CR initiation took 45.8 days on average; however, Asian, Black, and Hispanic persons took 9.4, 10.4 and 8.5 more days respectively to initiate CR, than White persons. This study reaffirmed that CR participation of insured individuals remains low and Asian, Black, and Hispanic persons were less likely to attend CR and had longer delays in initiating CR.

When considering the impacts of household income on the associations between race or ethnicity and CR participation, the researchers observed significant differences. Asian, Black, and Hispanic persons were significantly less likely to attend 1 or more CR sessions across all income levels when compared to White persons. Only Hispanic persons showed a sharp increase in the probability of CR attendance within the two highest income categories (≥$75 000 or ≥$100,000).

However, even at the highest level of income, Hispanic persons' CR attendance probability remained lower than White persons at the same income level. Compared to White persons with an income >$100,000, Asian, Black and Hispanic individuals with the highest income had a 28%, 11% and 28% lower probability respectively of attending ≥1 CR sessions, and the differences in CR attendance were most striking among the same racial or ethnic groups with the lowest income. The study's findings are consistent with previous evidence that socioeconomic factors affect CR participation.

The researchers' findings that only 26.5% of all CR eligible individuals participated and the positive association between income and attendance to CR reinforces previous literature findings. Additionally, they found lower attendance rates and longer intervals between the event and initiating CR among Asian, Black and Hispanic individuals. CR attendance differences by race or ethnicity remained across all income levels and was most evident for Asian, Black, and Hispanic individuals within low income levels.

What are the implications of these findings?

The findings highlight significant inequities reported in CR participation across multiple racial and ethnic groups regardless of household incomes. The authors express concern that eligible individuals are not fully benefiting from CR due to low income or inequities stemming from their race or ethnicity. Impacts leading to low participation and more days to initiate CR are potentially linked to the lack of equitable referrals, structural barriers (e.g., deprived neighborhoods, cost, location of care, and transport) and/or social factors (e.g., structural racism and social capital).

The authors suggest these results could initiate the expansion of CR participation in our health systems by developing automatic referral systems, clarifying early CR initiation steps, and offering telehealth options. These plans can work in tandem with equitable actions steps like increasing CR services and facilities in underserved areas, and implementing community or home-based CR to optimize the secondary prevention and promote health equity among all racial and ethnic groups.

Resources

Cardiac Rehabilitation Change Package
Million Hearts® (hhs.gov)

Cardiac Rehab
American Heart Association

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