

Impact of Income on Cardiovascular Risk

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ABSTRACT:

Background

Cardiovascular disease is not evenly distributed across income groups, with lower income consistently linked to worse heart health outcomes. However, most existing evidence is limited to single points in time, making it difficult to determine whether low income actually causes poorer cardiovascular health. This review examines how income level affects an individual's risk of developing cardiovascular disease.

Methods

This narrative review searched the PubMed database using terms related to income and cardiovascular disease. Studies were included if they were original research involving adults, published within the last twenty years, and reported both income level and cardiovascular disease outcomes. Eight studies met these criteria and were included in the review.

Results

All five included studies found that lower income was associated with poorer cardiovascular health, whether measured through disease frequency, predicted risk, or disease incidence. This pattern is consistent across different study designs and populations, including national surveys and an international study spanning twenty countries.

Discussion

These findings suggest that income should be treated as a measurable risk factor in cardiovascular care rather than as background information alone. Most of the studies reviewed can show that income and heart health are connected, but not that one causes the other, so this is an important gap for future research to close.

INTRODUCTION:

Studies have shown that cardiovascular disease tends to be unequally distributed across populations [1]. For example, a 2026 systematic review of twenty nine studies found that adults with lower incomes faced significantly higher death rates after a CVD diagnosis, even after controlling for well known risk factors like smoking, diabetes, and high blood pressure [1].

Similarly, research among adults in Peru found that income was linked to differences in obesity, blood pressure, and cholesterol [2]. Beyond these associations, researchers have also started looking at what's actually happening inside the body. In fact, one study of more than thirteen thousand adults found that people with lower income tended to have higher levels of a blood marker linked to inflammation, and that this seemed to be largely explained by higher rates of obesity, high blood pressure, low good cholesterol, and diabetes among lower income adults [3]. Still, despite this progress, a few important gaps remain. For one, most of the evidence available is really just a snapshot in time, which makes it hard to tell whether low income actually causes worse heart health, or whether it's more the other way around. On top of that, reviewers also note that we still don't fully understand how disadvantage translates into disease progression [1].

This study aims to answer the following research question: how does an individual's income level affect their risk of developing cardiovascular disease? By looking at how strongly, and in what ways, income seems to affect heart health, this paper argues that income should really be treated as a real, changeable risk factor when it comes to assessing someone's cardiovascular risk. Doing so could help doctors and public health officials do a better job targeting prevention where it's needed most.

METHODS:

This study was conducted as a narrative review examining the impact of income on cardiovascular disease (CVD) risk in adults. A search was performed using the PubMed database, using the search terms: ("Income"[Mesh] OR "Family Characteristics"[Mesh] OR income[tiab] OR "family income"[tiab] OR "household income"[tiab] OR "parental income"[tiab]) AND ("Cardiovascular Diseases"[Mesh] OR "cardiovascular disease"[tiab] OR "cardiovascular diseases"[tiab] OR CVD[tiab]). Studies were included if they were original studies that include adults, were published in the last 20 years, report income, compare people with different income levels, and report cardiovascular disease. Studies were excluded if they were review articles, focused on economic problems other than income, or contained biases that could compromise their findings. Based on these criteria, five studies met these criteria and were included in the review; three additional sources were used for background context.

RESULTS:

The five studies consisted of one observational study, one cross-sectional study, one prospective international study, one national survey, and one cohort study [4-8]. All five studies examined the relationship between income and cardiovascular disease risk in adults [4-8].

Table 1. Summary of Studies Examining Income and Cardiovascular Disease Risk

Study	Study Design	Population	Main Findings
Trends in Cardiovascular Disease Prevalence by Income Level in the United States [4]	Observational study	U.S. adults	Adults in lower-income groups had a higher frequency of cardiovascular disease than adults in higher-income groups.
Family Income and Cardiovascular Disease Risk in American Adults [5]	Cross-sectional study	U.S. adults	Lower family income was associated with a greater likelihood of cardiovascular disease and higher cardiovascular mortality.
Prospective Urban Rural Epidemiologic (PURE) Study [6]	Prospective international study	Adults from 20 countries	Participants from lower-income countries experienced higher rates of cardiovascular disease than those from higher-income countries.
Income Disparities in Absolute Cardiovascular Risk and Cardiovascular Risk Factors in the United States, 1999-2014 [7]	National survey	U.S. adults	Participants in lower-income groups had higher predicted 10-year cardiovascular risk than those in middle- and high-income groups.
Reasons for Geographic and Racial Differences in Stroke (REGARDS) Cohort Study [8]	Cohort study	Black and White U.S. adults	Lower-income participants had a higher incidence of coronary heart disease than higher-income participants.

In all five studies, lower income was consistently associated with poorer cardiovascular health [4-8]. Two studies reported a higher frequency of cardiovascular disease among lower-income adults [4,5]. The observational study looked at U.S. survey data from 1999 to 2016 and found that heart disease became less common mainly among the highest-income group, while rates among everyone else dropped more slowly, stayed flat, or even went up [4]. The cross-sectional study also found that people in the lowest income group were more likely to die of heart-related

causes during the follow-up period [5]. The international PURE study reported higher rates of cardiovascular disease among participants living in lower-income countries compared with those in higher-income countries, and this pattern showed up across many different countries [6]. One study reported higher predicted 10-year cardiovascular risk among lower-income adults [7]. This gap in predicted risk did not shrink over the years studied [7]. The cohort study, Reasons for Geographic and Racial Differences in Stroke (REGARDS) Cohort Study, found a higher incidence of coronary heart disease among lower-income adults [8]. This risk was more than double for people under 65 with both low income and low education, compared with people who had both high income and high education, but the difference disappeared for people 65 and older [8].

DISCUSSION:

Across the five reviewed studies, and consistent with the broader literature cited in the introduction [1-3], income was linked to worse cardiovascular outcomes, whether it was through disease frequency, predicted risk, mortality, or biological markers like inflammation [4-8]. This answers the original research question: income does appear to meaningfully affect a person's risk of developing cardiovascular disease [1,3-8].

These results were not entirely surprising, since income and health have long been linked in public health research. What was more surprising was how consistent the pattern was across very different study types and populations, from a national U.S. survey to an international cohort spanning twenty countries [6,7]. This shows that income isn't just one risk factor among many, it seems to be connected to a lot of the others too.

These findings match what other research has already shown, that socioeconomic status plays a big role in health differences between people. Going forward, this supports the idea that income should be looked at as a regular part of assessing someone's cardiovascular health risk, not just background information. It points to a bigger idea that goes beyond just heart disease, financial hardship doesn't just make it harder to get care, it might actually affect a person's health directly.

Several of the studies reviewed used cross-sectional or observational designs [1,4,5], which means they can show that income and heart health are connected, but can't prove that low income actually causes worse outcomes. It's also possible the relationship works the other way around, poor health could make it harder for someone to earn money over time, and reviewers say this is hard to rule out [1]. On top of that, studies measured income and socioeconomic status in different ways [1,2], which makes it harder to compare results across studies.

Taken together, these findings suggest that income should be treated as a measurable risk factor in cardiovascular care, and that future research should prioritize studies to better establish cause and effect.

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