



# Is there an Association between Level of Optimism and Cardiovascular Disease?



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## Introduction

- Poor psychological health has been associated with numerous cardiovascular conditions like broken heart syndrome, cardiac dysfunction, etc. [4] [6]
- Pessimism has been a prelude to vicious cycles of negative thinking, manifesting into negative coping mechanisms and perceiving themselves as more vulnerable to health misfortunes in the future. [4]
- Optimism here specifically is the tendency to have favorable futuristic expectations, as well as an overall positive self-concept about oneself and health. [2] [1]
- Pessimistic individuals tend to indulge in unhealthy diets and alcohol consumption, whilst optimistic individuals have been seen adapting better to disease and health. [4] [3] [5]
- Data concerning pessimism and its link to cardiovascular disease remain inconclusive, as well as the frequency of optimism and its effects. [4]

## Methods

### - Sample

- 6,504 respondents from the fifth wave of The U.S. National Longitudinal Survey of Adolescent Health (AddHealth), a representative survey of adolescents in grades 7-12 in the United States that were followed over time, now in their late 30s and early 40s during the time of the research.

### - Measures

- ❖ Biological Sex: Sex assigned at birth
- ❖ Optimism Score: cumulative score from 0 to 12 calculated from the participants' responses to 4 questions related to their optimism
- ❖ Cardiovascular Disease: binary response to presence or absence of any of the following: (heart disease, high blood pressure, blood clots, heart failure, stroke)
- ❖ Race
- ❖ Total amount of debts: (medical, legal, student loans, etc.)

## Research Questions

- Is there a relationship between optimism and overall risk of cardiovascular disease (CVD)?
- Does the relationship between greater optimism and cardiovascular disease still hold true when other demographic factors are considered (sex, race, income)?

## Results

### - Bivariate:

- Logistic analyses showed that optimism levels are significantly associated with cardiovascular disease manifestation ( $p < 0.05$ )
- For every extra point in optimism, the odds of CVD decrease by 8.3%

### - Multivariate:

- Multiple logistic regression tests found that optimism is still significant with CVD while holding sex constant, therefore gender is not a moderator. ( $OR=0.9385$ ,  $CI=0.84\sim 0.94$ )
- When optimism is constant, CVD correlated more with males than females. ( $OR=0.579$  less likely for F)
- When controlling race, income, and sex, the relationship between optimism and CVD still holds as significant. ( $OR=0.916$ ,  $p < 0.05$ )

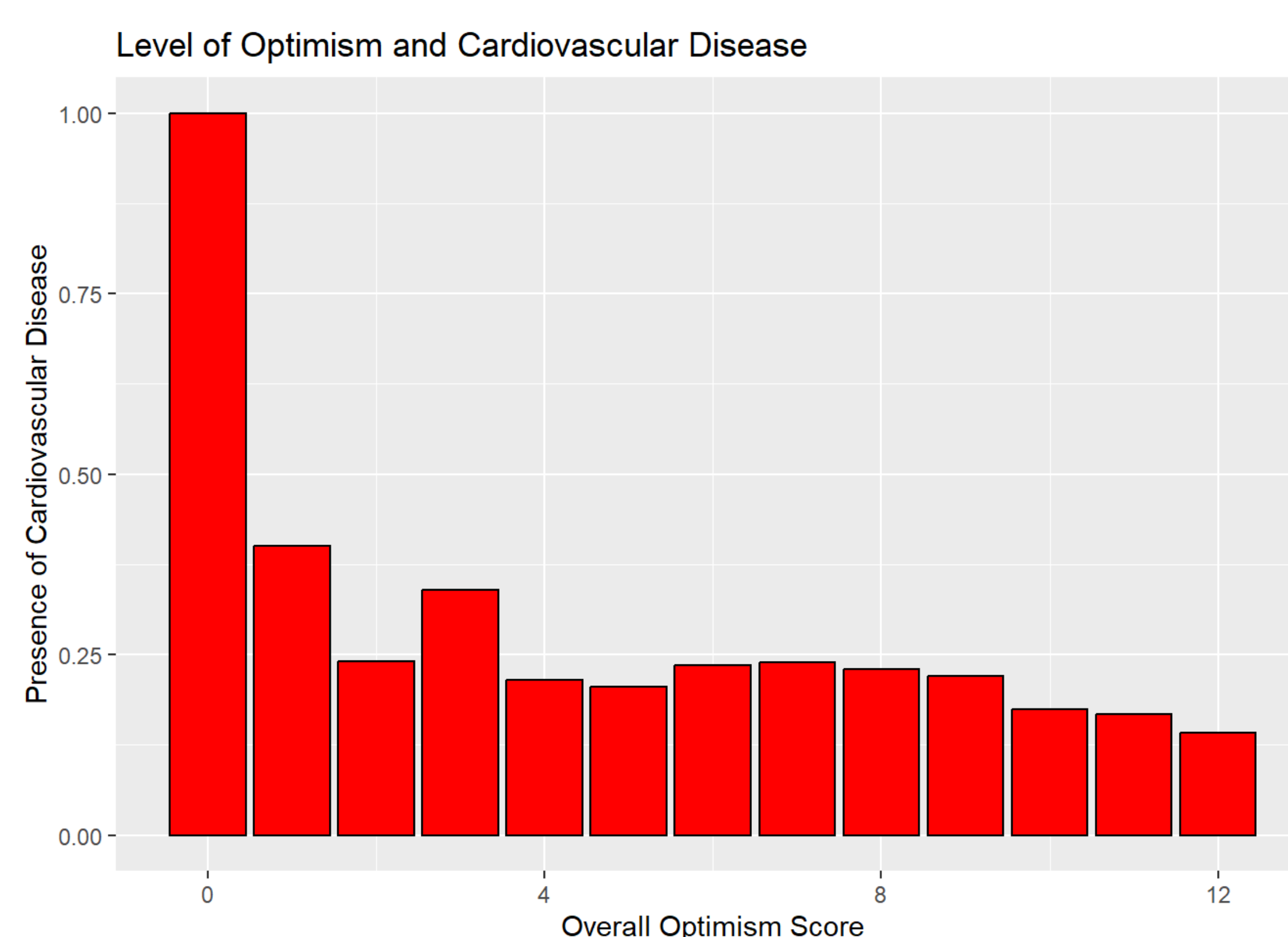


Figure 1: Level of Optimism and Presence of CVD

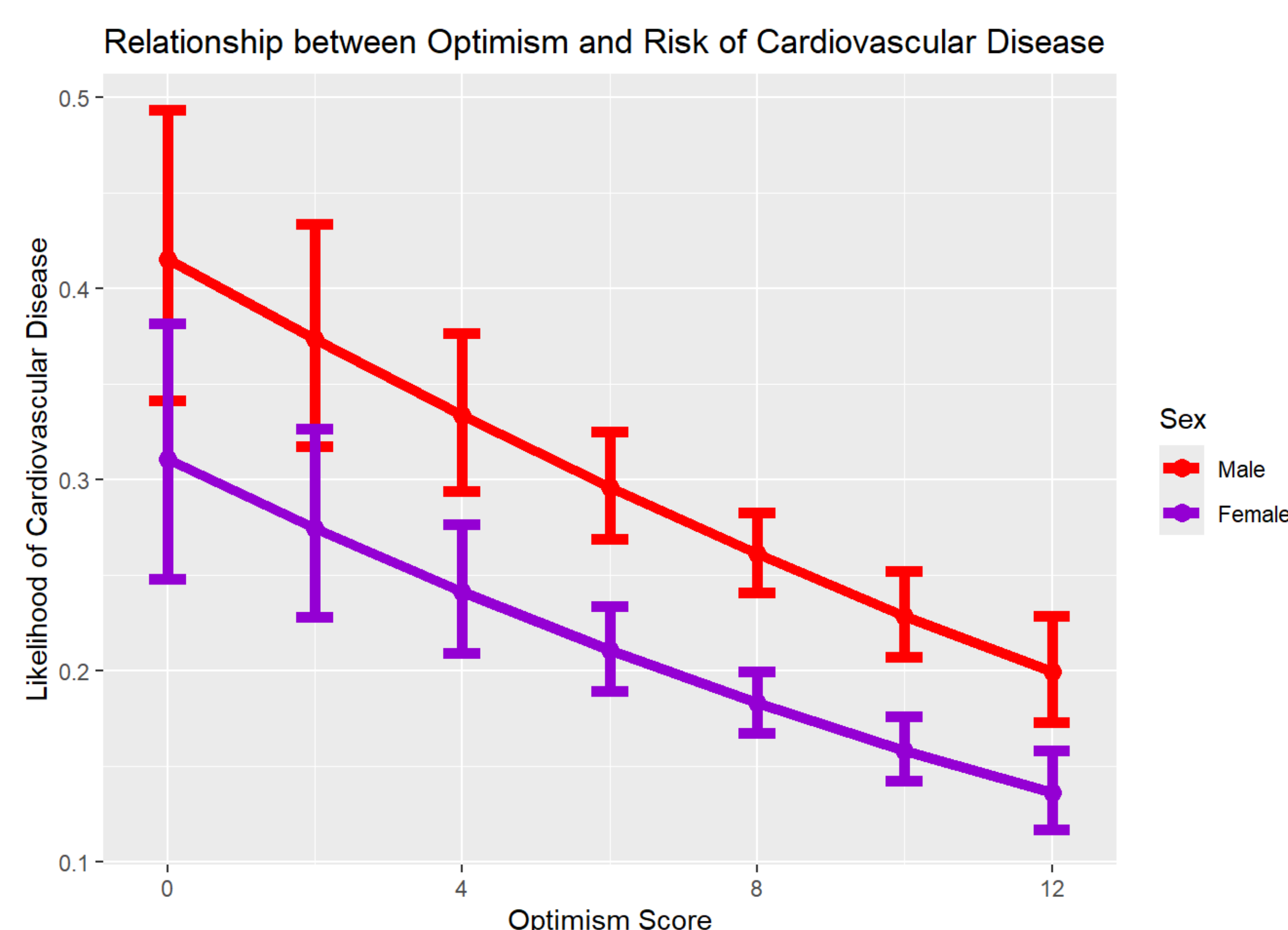


Figure 2: Level of Optimism and Presence of CVD and Sex

## Discussion

- Pessimistic people may be more likely to fall to cardiovascular disease, which can be key in clinical trials and when assessing patients and encouraging them.
- The gradual decrease in likelihood of CVD provides evidence for both pessimism and optimism's effects on cardio-health, as well as its significance even while considering other demographic factors.
- Further research with more questions related to optimism should be done to make results more accurate.
- Looking at optimism and pessimism specifically proved the existence and vitality of the mind-body connection.

## References

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