

## Introduction

Heart disease is often called the number one killer in America. Individuals in lower socioeconomic statuses struggle to get access to good healthcare and healthy foods, which can increase their risk of heart disease. Without insurance, individuals who have initial symptoms reject treatment, which can cause the disease to progress rapidly without intervention. Over time, blockages in the coronary arteries can lead to the slow death of heart muscle and the deterioration of the vascular system, which can progress in the form of a heart attack, stroke, and difficulty performing day to day activities.

The question is: Is there a correlation between socioeconomic status and heart disease in Fort Bend Communities?

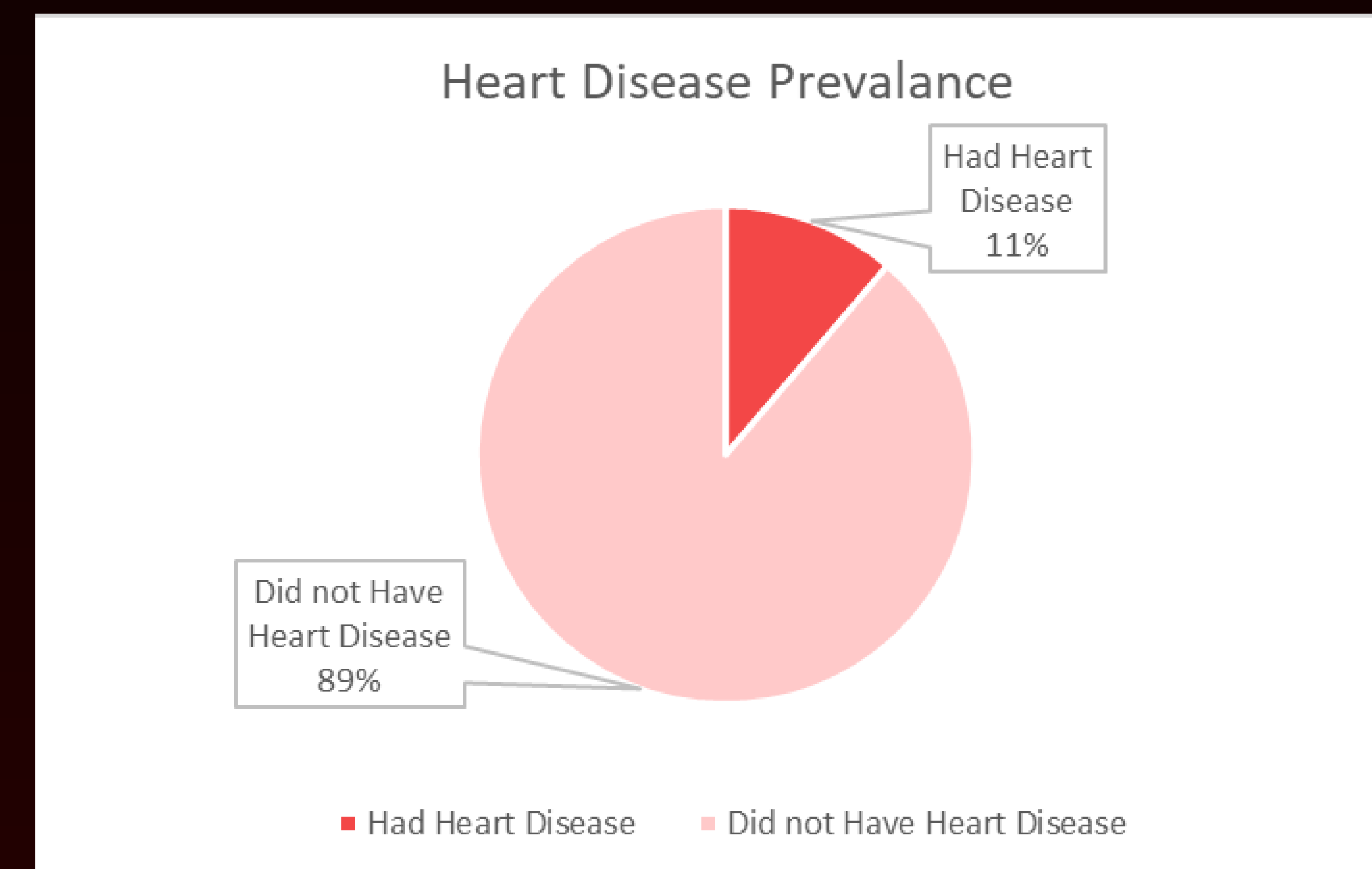
## Methodology

The data for the study was gathered through voluntary anonymous survey responses. The data included was both qualitative and quantitative. Participants were asked to take a series of multiple choice questions indicating family income (low, medium, or high), whether they were insured or uninsured, and whether a member in their family had suffered from heart disease in the past. If applicable, participants could then answer additional questions about the type of heart disease they had suffered from, as well as the treatment they had received. The survey was distributed through email and QR code to FBISD high schools. Through this method, a total of 71 responses were collected.

*Figure 1:* Percent of participants who had members of the family that suffered from heart disease

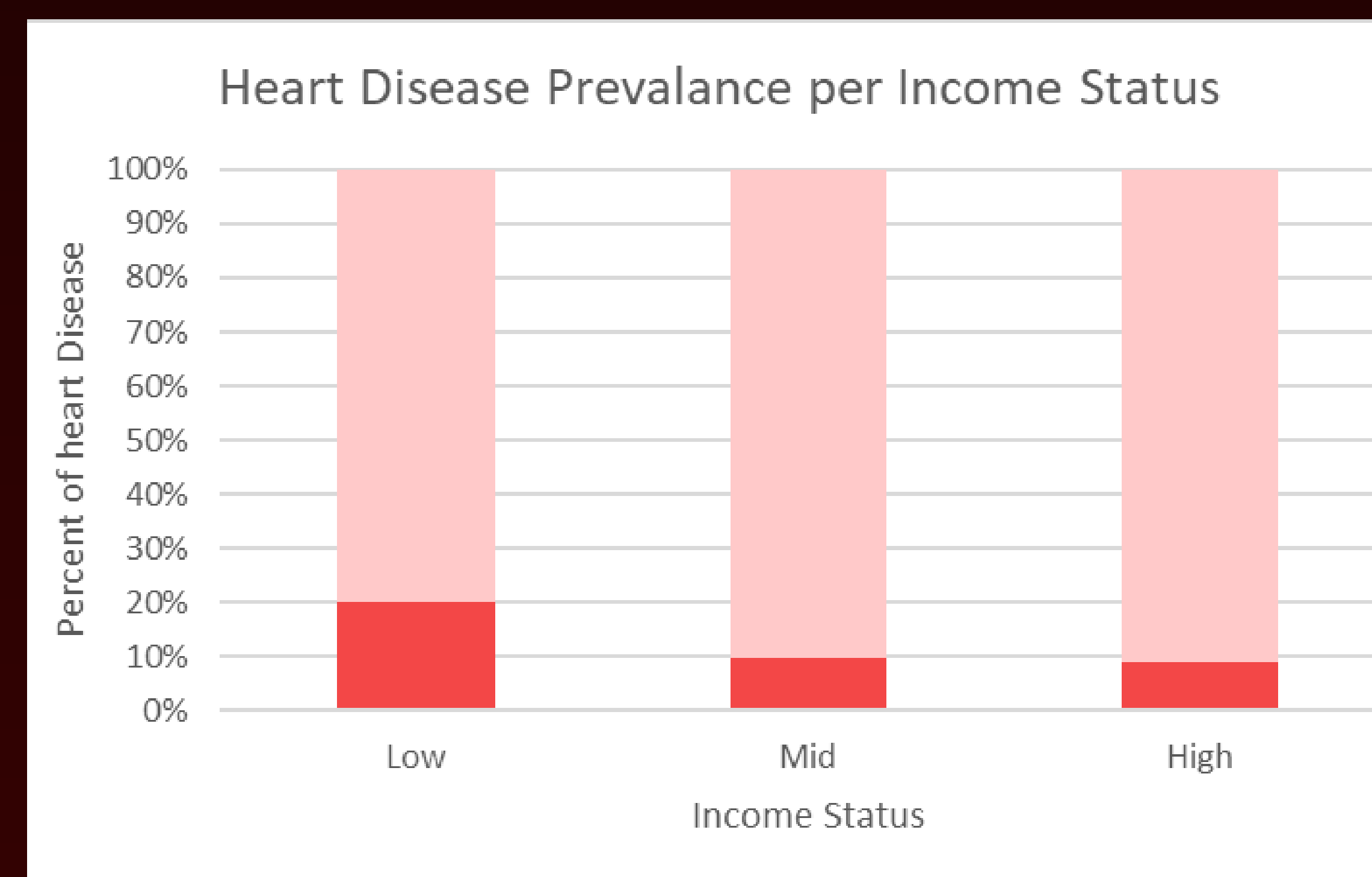
The American Heart Association reported that 121.5 million adults, or about 48% of American adults had cardiovascular disease in 2019 (AHA 2019).

## Results



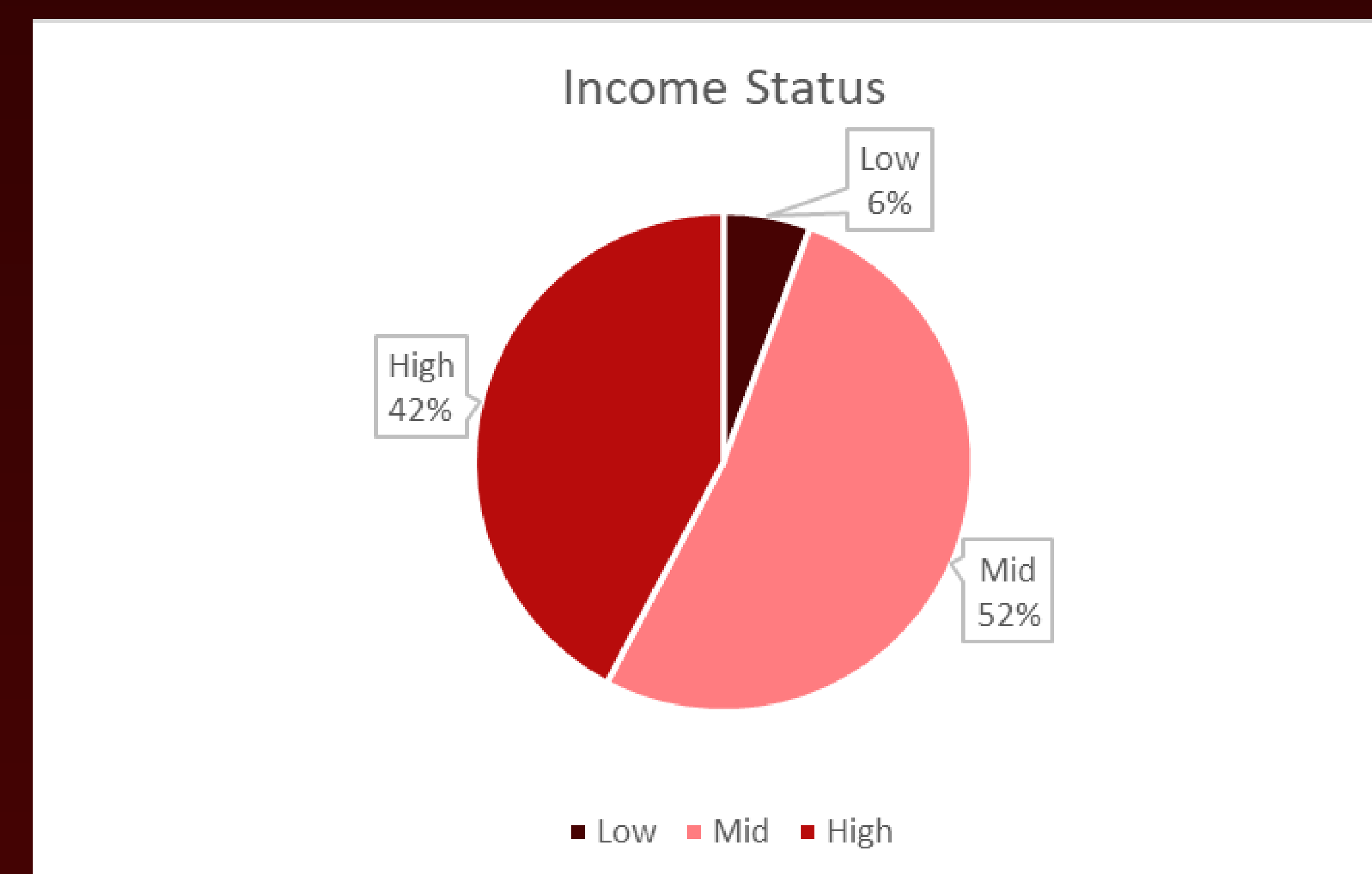
*Figure 2:* Percent of individuals from each income group that had a family member affected by heart disease.

A study published in the Journal of Cardiac Failure reports that heart failure deaths are more common in areas with high rates of poverty and other forms of social disadvantage (Beven 2020).



*Figure 3:* Income status of members surveyed

In a study done by Memorial Hermann Southwest, 6.57% of families in Fort Bend County live below the poverty line. In the state of Texas as a whole, that number is 11.49% (Memorial Hermann 2020).



## Findings/Conclusion

Using an approach that looks at *Figure 2* alone, it can be assumed that there is a negative correlation between socioeconomic status and heart disease rates. About 6% of the total population of the sample falls within the low-income status category, which is much lower than the national average of 11.4%. 5 participants claimed to be uninsured, but out of these, none claimed to have heart disease in their family, so a significant conclusion cannot be made about the relationship between insurance status and heart disease. Cross-applying the data shows that while low socioeconomic classes did have higher rates of heart disease, the percent of individuals in Fort Bend County that fall in this category was too low to derive a significant conclusion.

## Discussion

The data aligns well with data provided by Memorial Hermann Southwest, which shows that Fort Bend County has a significantly higher median income than the natural average (Memorial Hermann 2022). This may explain why the survey lacked significant participation from individuals of low-income communities. Future studies would likely expand participation beyond Fort Bend County, and include individuals living in Harries County, and throughout Houston. The survey could be distributed through the hospital system to ensure that it is distributed to a diverse sample. This may provide a more holistic approach to determining if there is a significant correlation between socioeconomic class and heart disease.