



The Relationship Between Rate of Cardiovascular Disease and Immunization among Adults over 65



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Introduction

- ❖ Those who are diagnosed with heart disease or other chronic health conditions are at high risk of complications due to a vaccine-preventable illness, especially at older ages. (Boey et al., 2020).
- ❖ Many vaccine hesitant individuals believe vaccines pose higher risks to their health than the reward of immunization is worth. (Schmidtke et al., 2022)
- ❖ It is unknown how an individual's chronic health conditions, specifically cardiac disease, influence immunization decision-making.

Research Questions

- ❖ Are individuals with cardiovascular disease (CVD) more likely to become immunized?
- ❖ Does the recency of the individual's medical visits influence this relationship?
- ❖ What influence do other lifestyle choices have on the relationship between CVD and immunization?

Methods

Sample

- ❖ Participants ages 65+ (n=115,791) were interviewed over telephone through the Behavior Risk Factor Surveillance System (BRFSS), a state-lead survey that collects information about health related high-risk and preventative behaviors. This sample is taken from the 2021 survey.

Measures

- ❖ Participants were surveyed as to whether they had ever been told they had angina or coronary heart disease to determine Cardiovascular Disease (CVD) diagnosis in this analysis. 10.7% (n=12,373) of the population responded yes.
- ❖ To determine immunization, those who had either ever received the pneumonia vaccine or received the influenza vaccine within the past year were categorized as positive for immunization (81.6%). Those with neither were categorized as non-immunized (18.4%).

Results

Bivariate

- ❖ Chi-Square analysis showed that CVD diagnosis was significantly associated with increased rate of immunization. ($p = <0.0001$).
- ❖ There was ~7% increase in the immunized population when participants had CVD (88.1% vacc.) vs when they did not (80.7% vacc.).

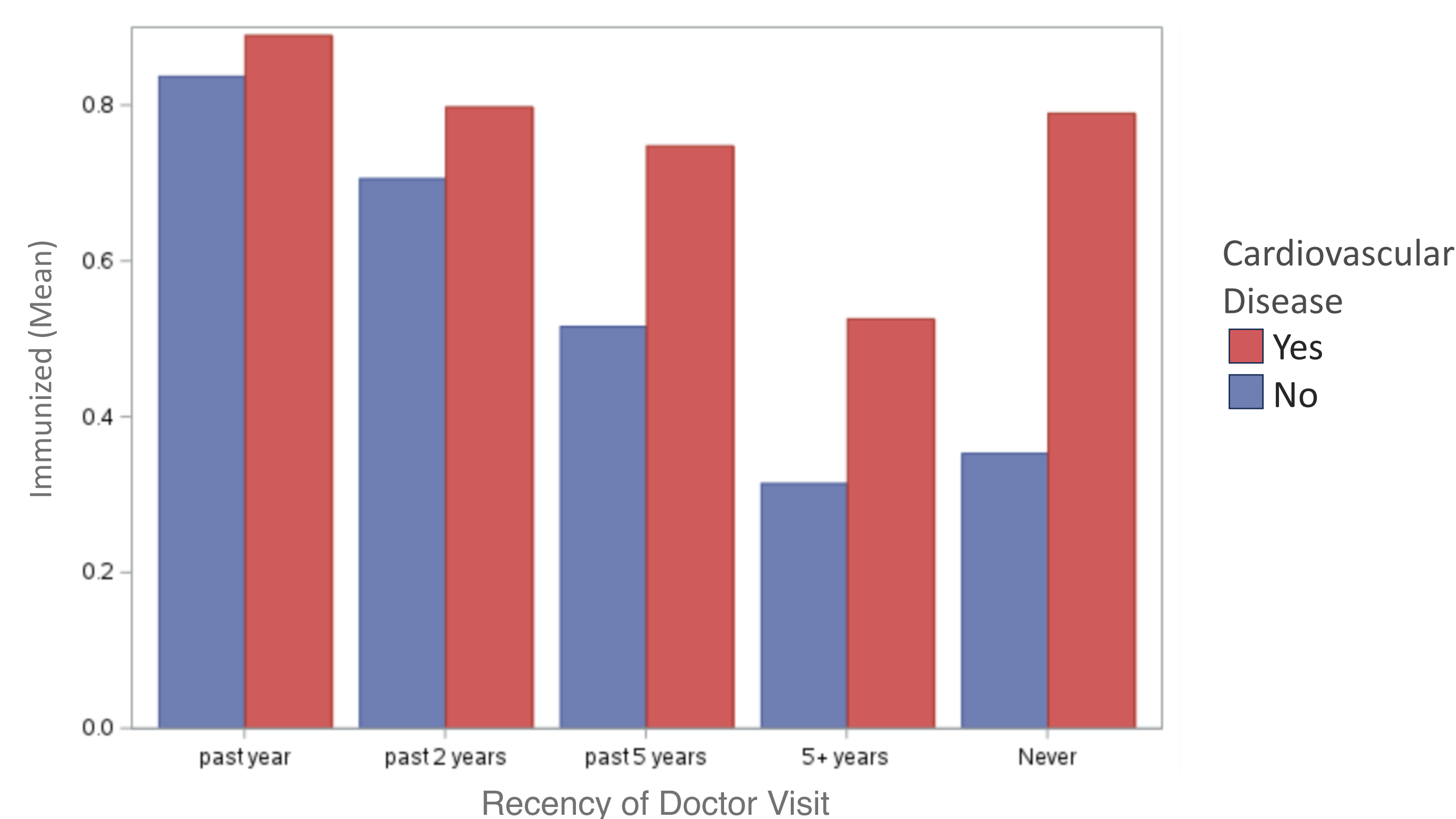


Figure 1: The Relationship Between CVD and Immunization Rate based on Doctor Visit Recency

Multivariate

- ❖ Logistic regression analyses demonstrated that gender, education, exercise, and doctor visit recency had no impact on the relationship between CVD and Immunization rates (OR 1.757, $p = <0.0001$).
- ❖ Doctor visit recency had a larger independent impact on immunization rates than CVD when comparing visits within the past year vs never visiting (OR 7.506, $p < 0.0001$).
- ❖ Education level also independently impacted immunization rate, but to a lesser extent than doctor visit recency (OR 3.603, $p < 0.0001$).

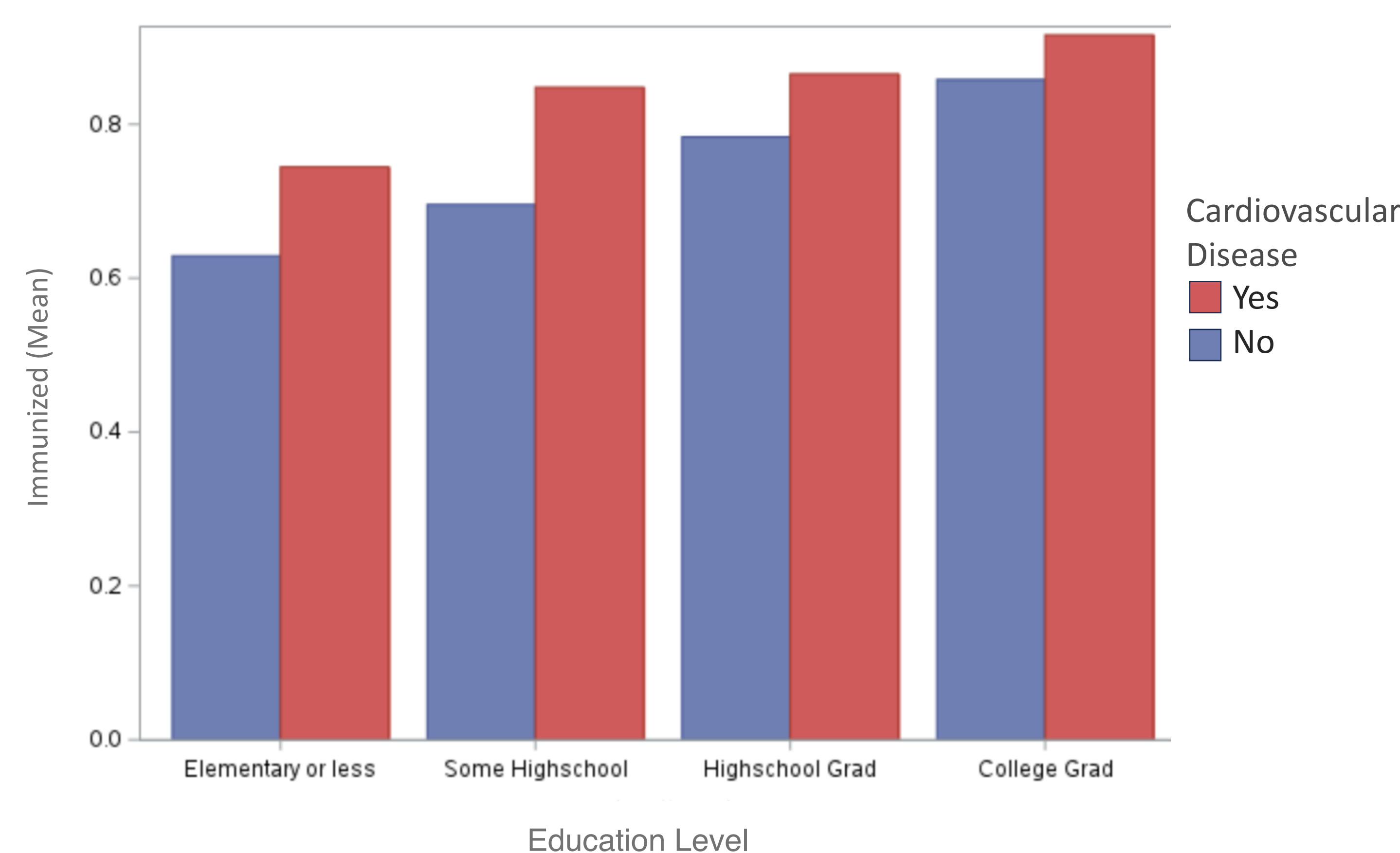


Figure 2: CVD vs Immunization Categorized by Participant's Education Level

- ❖ No other vaccines were surveyed in the BRFSS dataset.

Discussion

- ❖ Those who are diagnosed with CVD are significantly more likely to acquire immunization than those who are not diagnosed.
- ❖ Although the recency of doctor visits markedly increased the chances of a participant receiving immunization, it did not impact the relationship between CVD and immunization.
- ❖ Further research should delve into other co-morbidities such as obesity or COPD.

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