

# **What are the Effects of Educational Level on Cardiovascular Disease?**

**Naomi Burakovsky**

**Pleasanton, California**

## **Abstract:**

### *Introduction:*

Cardiovascular disease (CVD), including heart attacks and strokes, is the leading cause of death globally. Education may be a social determinant that plays a role as a protective factor in CVD. This research aims to answer the question: does one's level of educational attainment play a role influencing their risk of a lifetime CVD?

### *Methods:*

In order to investigate the relationship between CVD and educational levels, a scoping literature review was conducted through search engines PubMed and Google Scholar. The key search terms used were CVD, education, social determinants of health and impact. The articles used included studies that reported on level of education as a variable and reported on CVD risk in their results. Systematic reviews and other literature reviews were excluded.

### *Results:*

It was found that men are more likely to be smokers and that smokers more often had professions as hairdressers, hotel workers, butchers, and painters. Individuals with a less than high school education had a 13.54% risk (females) and an 8.92% risk (males) of being heavy smokers. In men, the CVD risk decreased from 59% to 42.2% while the educational level increased. Another study revealed that more than half of participants with less than a high school education experienced a lifetime CVD event.

### *Discussion:*

The level of education an individual receives was found to be correlated to their risk of a lifetime CVD. However, this study had limitations in that it could not fully isolate the direct impact of CVD on education, as there were mediation factors in between. Scientists and researchers should conduct further research on this topic, maybe even in different areas of the globe (to examine different educational systems), to find a more concrete answer on this topic.

## **Introduction:**

About 800,000 people die yearly of cardiovascular disease (CVD) in the US alone, which is 1 in every 3 deaths [1]. CVD is the leading cause of death not only in the US, but in the entire world. CVD demands urgent attention in order to mitigate its impact.

Smoking is known to damage the lungs and heart, and statistics show that smoking even one cigarette per day can cause a 40-50% increased CVD risk [2]. Obesity is also proven to be another factor in the development of CVD [3]. However, education is a social determinant of health that does not receive much attention.

Whether the level of education that one receives relates to their risk of developing CVD needs to be studied more due to the lack of attention it receives as a social determinant of CVD.

Especially considering that CVD is such a big cause of death, any study that could help attain more information on the topic should demand attention. This study will review the relationship between the educational level of a person (eg. less than high school, high school graduates, more than high school) and their risk of developing CVD.

### **Methods:**

This scoping literature search reviewed studies examining CVD's relation to educational attainment. The search engines used were PubMed and Google Scholar. The key search terms used included CVD, education, social determinants of health, and impact. The articles were included if they reported the level of education as a variable, studied mediation factors, and if they provided helpful information on how levels of education relate to CVD risk in general. The articles were excluded if they were not original research from credible, peer reviewed sources.

### **Results:**

Additionally, people of all genders are more inclined to smoke if they work in certain professions, such as hairdressing, butchery, painting, or hotel work and men in general are more likely to be heavy smokers [5]. In addition, poor education is a significant factor in the intensity of cigarette smoking, with a 13.54% risk for females and an 8.92% risk for males being heavy smokers compared to individuals with higher education [5]. Another finding by the study indicated that less than 40% of smokers received a higher education, while more than 70% had a lower education [5].

It was observed that for men, the lifetime risk of CVD decreased from 59% to 42.2% as their educational level increased [6]. Another conclusion presented in the article stated that more than half of participants with less than a high school education experienced CVD in their life [6].

Another study summarized that higher education was proven to improve high-density lipoprotein, good cholesterol, which subsequently decreases CVD risk [7].

Regarding racial differences, another study found similar results. For both black and white middle aged men and women with a less than a high school education, an increased risk of a stroke was found compared to those with a college completion [6].

Article	Purpose	Independent Variable	Dependent Variable
Educational Attainment and Lifetime Risk of CVD	To investigate the number of years that individuals lived with and without CVD through their level of education.	Level of education Sex	Lifetime CVD risk
Impact of school and vocational education on smoking behavior	To research how school impacts smoking behavior of adolescents and young adults.	Level of education Occupation	Smoking status
Association of Educational Attainment with Lifetime Risk of CVD	To find what the lifetime risks of CVD are according to educational attainment and to emphasize the need to reduce CVD inequalities.	Level of education Cholesterol levels	Lifetime CVD risk
Educational attainment and CVD in the United States		Level of education Race	Lifetime CVD risk

**Discussion:**

The key takeaway from the reviewed studies is that a lower educational attainment is found to increase the individual’s risk of a lifetime CVD. Smoking is also found to be a significant factor as increased smoking can be caused from lower educational levels and smoking is a attribute to CVD [5]. Now that a contributing cause to CVD is known, more immediate action can be taken to improve this situation globally.

The main research question of this study was whether one’s level of educational attainment plays a role influencing their risk of a lifetime CVD, and after reviewing the studies and examining their results, the answer is found to be yes. Individuals with higher educational attainment demonstrate a correspondingly reduced risk of developing CVD, and vice versa. This finding

demonstrates the profound impact of education on health issues. If educational attainment is linked to CVD maybe improving educational opportunities globally will serve as a preventive measure against CVD.

However, it is beyond the scope of this study to determine whether education is a correlation or a causation of CVD, if it directly causes CVD or not. In addition, there are many other contributing variables to this topic, so the existing data may be incorrect as it does not fully isolate just education and CVD. This research is also not able to distinctly separate different educational systems, as the educational systems in the world differ and are very diverse from one another.

Further research is needed to establish a concrete position on whether educational levels are a variable to CVD risk or if it is directly associated. I also believe that many studies should be done in different areas across the globe, to review if different educational systems make an impact.

#### **References:**

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