



10-2015

# Education for Your Health!

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## Repository Citation

Bollinger, Christopher R., "Education for Your Health!" (2015). *Issue Brief on Topics Affecting Kentucky's Economy*. 16.  
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# CENTER FOR BUSINESS AND ECONOMIC RESEARCH

## ISSUE BRIEF

on topics affecting Kentucky's economy

October 2015

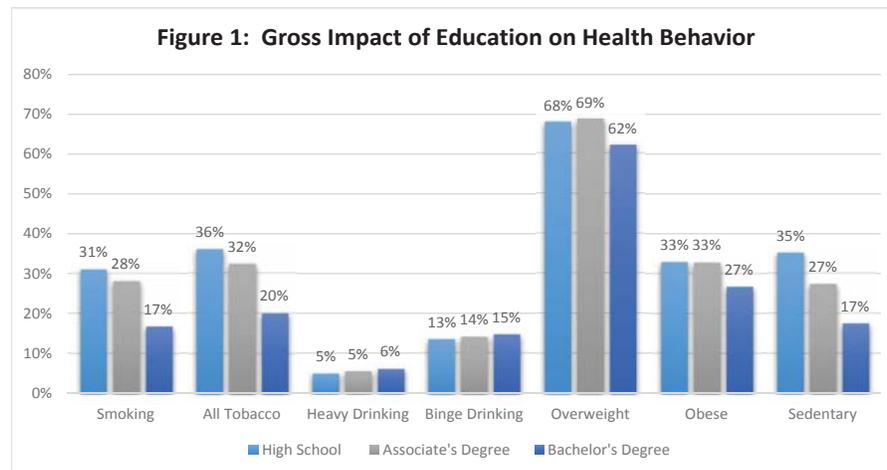
### Education for Your Health!

By Christopher R. Bollinger (crboll@uky.edu)\*

The health of the people of Kentucky is of high concern for policymakers and citizens alike. Individuals want to live healthy, productive lives, while policymakers recognize that chronic illnesses cost the state in myriad ways. In this brief, we examine the link between educational attainment and health outcomes. We focus on two groups of health outcomes. The first are behavioral and include choices: tobacco use, alcohol use, obesity, and exercise. The second group are outcomes highly associated with these behaviors: heart attack, angina, stroke, and diabetes. The Center for Disease Control (CDC) estimates that these four diseases may cost Kentuckians over \$5 billion annually in lost days at work and medical bills. Our simulations suggest that if Kentucky were to achieve education levels comparable to the U.S., we could reduce those costs by nearly \$200 million per year.

With the exception of alcohol consumption, higher education leads to improved health behaviors. We also find that higher education is associated with lower rates of all four diseases. We use data from the Behavioral Risk Factor Surveillance System (BRFSS) for the years 2009 through 2012 to examine these questions. These data represent a comprehensive sample of Kentuckians and provide information on prevalence of these conditions. Our models control for other factors such as race, gender, age, and employment. We examine two education impacts: the gross impact and the impact net of income. It is well known that high income is often associated with better health. We measure the gross impact of education on health which may work through income as well as other channels, and the net effect of education, controlling for income levels.

Figure 1 presents the impact of education for seven behavioral factors: smoking, all tobacco use, heavy drinking, binge drinking, overweight, obese, and sedentary.



binge drinking, overweight, obesity, and lack of exercise (sedentary lifestyle). Each of these factors has been well documented to be associated with chronic health conditions such as diabetes and heart disease. With the exception of the two alcohol consumption measures, a Bachelor's degree is strongly associated with lower rates of these negative behaviors. Indeed,

those with a Bachelor's degree have about half the incidence of smoking and tobacco use compared to high school graduates. They are also more likely to participate in regular exercise activities. Rates of obesity and overweight among college graduates are 20% and 10% lower (respectively) than their high school graduates. The only behaviors that have a positive association with higher education are related to alcohol consumption.

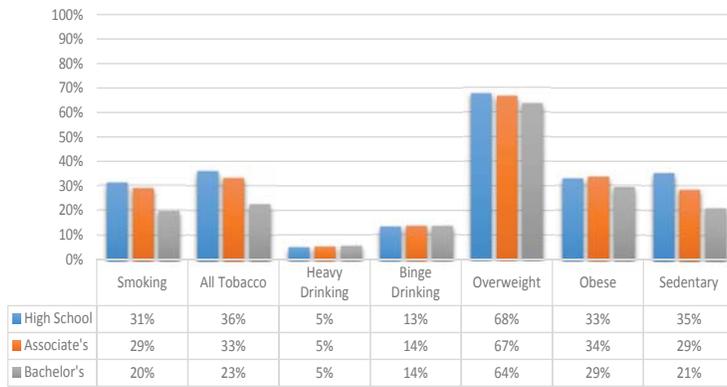
\*This research was funded by the Council on Postsecondary Education (CPE) to study the relationship between education and outcomes such as income, employment levels, health, public assistance use, and crime.

Individuals with a Bachelor's degree are 50% less likely to smoke or use tobacco products, which decreases their likelihood of developing chronic diseases such as diabetes and heart disease.



*Even when we control for income, college graduates report healthier outcomes, with the exception of alcohol consumption.*

**Figure 2: Net Education Effect on Health Behaviors**

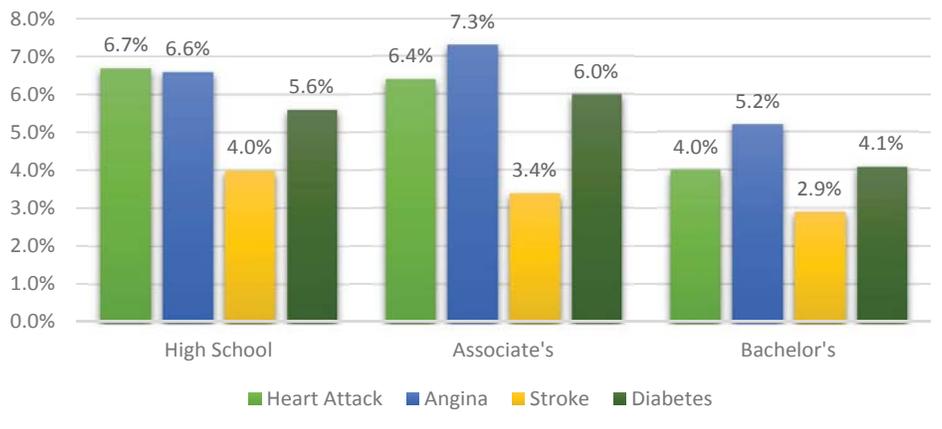


In Figure 2, we present the education effect on the seven behaviors. However, in this model, we control for income. What is surprising here is that, with the exception of the alcohol consumption measures, very little has changed in the relationship between behaviors associated with chronic disease and level of education. Far from being simply an income effect, education appears to lead individuals to adopt a healthier lifestyle. The exception to this is alcohol consumption. When we control for income, the differences in alcohol consumption between high school and college graduates, become much smaller. The higher alcohol consumption among college graduates in Figure 2 appears largely to work through the income channel.

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We turn next to actual incidence of diseases. In Figure 3, we compare the differences in diagnosis rates for four important chronic diseases: heart attack, angina, stroke, and diabetes. For each of these four diseases, the rates are lower among those with college degrees. Individuals with a college degree reduce their rates of heart attack by 40%, angina by 20%, stroke by 28%, and diabetes by 27% compared to those with a high school diploma.

**Figure 3: Education Effect on Chronic Disease Risk**



*Increasing the number of college graduates by 1% (both Associate's and Bachelor's degree holders), the predicted incidence of heart attack and stroke decreases by 0.3%.*

Using our models we predict the possible reduction in overall rates of these diseases through changes in higher education. If Kentucky could increase the rates of Associate's and Bachelor's degrees each by only 1%, we would reduce rates of heart attack and stroke by 0.3%, and diabetes by 0.1%. This small change in educational attainment could result in a cost savings of over \$6 million annually. By achieving education attainment rates comparable to the rest of the U.S., Kentuckians could save nearly \$200 million annually in health care related costs.

*Increasing the overall education level of the state could save the state of Kentucky almost \$200 million in health care costs.*

The results are clear: Kentuckians with a higher level of education lead healthier lives. Increasing education could save the state millions of dollars annually in healthcare costs and potentially increase worker productivity by reducing illness-related absences.