THE UNIVERSITY OF NORTH CAROLINA
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THE CAUSAL IMPACT OF EDUCATIONAL ATTAINMENT ON SELF-RATED HEALTH

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INTRODUCTION

There are growing health disparities across educational attainment. There is likely a causal relationship between education and health. Thus, this paper aims to expand on the existing literature by answering three questions of interest:
1. What is the functional form that best describes the relationship between educational attainment and self-rated health?
2. What is the causal impact of educational attainment on adult self-rated health in the United States?
3. How does the size of the effect of education on health differ by population subgroup?

THEORETICAL MODEL

The life course model states there are many interconnected factors that influence both health and education, occurring at different points across the life-course.

EMPIRICAL MODEL

\[ SRH_{it} = \alpha + \beta_1 Educat_{it} + \beta_2 HealthBehavior_{it} + YX_{it} + \delta Z_{it} + \mu_i + \epsilon_{it} \]

This paper utilized a correlated random effects model using the Mundlak procedure. \( X_{it} \) represents exogenous time-varying variables. \( Z_{it} \) represents time-invariant variable. \( \mu_i \) represents the time-invariant error and \( \epsilon_{it} \) reflects random variation for time period and individual.

DATA/METHODS

The data comes from the National Longitudinal Study of Adolescent to Adult Health (Add Health). There are five waves of data (1994-2018) and spanning ages from on average 15 in Wave 1 to on average 38 in Wave V. The analytic sample includes all records with non-missing values and ends up with 54,014 unique observations and 17,643 unique individuals. I included the following variables in my analysis:

- **Education**: 13 potential functional forms including a continuous variable of years of education, as credential milestones (e.g., high school, college), and a combination thereof.
- **Self-rated health**: Measured on a 1 to 5 scale from excellent to poor health.
- **Additional controls**: Race, gender, health behaviors, age, school factors, family structure, parental education.

RESULTS: Functional Form

<table>
<thead>
<tr>
<th>OPTIMAL FUNCTIONAL FORM &amp; TEST FOR ENDOGENEITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Sample</td>
</tr>
<tr>
<td>White Women</td>
</tr>
<tr>
<td>White Men</td>
</tr>
<tr>
<td>Black Women</td>
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<tr>
<td>Black Men</td>
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</tbody>
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I determined the optimal functional form for education for each population subgroup by comparing model fit statistics using Bayesian Information Criterion (BIC) Scores which are shown in the table above. We also see that endogeneity is present for all groups indicating correlated random effects is an appropriate method.

RESULTS: Causal Effect

<table>
<thead>
<tr>
<th>Regression Results: Total Sample</th>
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</thead>
<tbody>
<tr>
<td>Regressors</td>
</tr>
<tr>
<td>Continuous Education</td>
</tr>
<tr>
<td>Less than High School</td>
</tr>
<tr>
<td>High School and Some College</td>
</tr>
</tbody>
</table>

For the full sample, we see that each additional year of education leads to a lower (better) self-rated health score, however, it is not statistically significant. Additionally, there are clear benefits to receiving a high school degree and even more so to receiving a college degree. The results for population subgroups vary.

CONCLUSION

Overall, results showed that higher educational attainment leads to better self-rated health, however, the relationship differs by population subgroup:
- We see that a solely credential model is not the best model and each additional year of education is important for health, which connects closely to human capital theory.
- Credentials seem particularly important for White women and continuous education is important for White men.
- Black men did not have a significant education coefficient which could indicate that education is not as protective for health for this group.

Additionally, we see that without the endogeneity correction, there would be biased results that show larger effects of education than actually exist.

ACKNOWLEDGEMENTS

I am grateful for the support of my thesis advisors, Dr. David Guilkey and Dr. Robert Hummer for their guidance during this project. Additionally, I would like to thank Dr. Jane Fruehwirth for assisting me to complete this thesis.