Dementia in the Elderly and Education

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Abstract

Insert abstract text here: 75-200 word, very high-level summary of your project.

1 Introduction

Answer the questions

1. Why should the reader care?
2. Why did you choose this topic?
3. What question will you answer? How will you do it?
4. What did you find?
5. Give a "road map" of the paper. Where will the reader find the various parts of your work?
    - In Section 2, we review the literature.
    - In Section 3 , we describe our data.
    - In Section 4 , we explain what analyses we did and provide evidence to explain what our results mean.
    - In Section 5 , we explore the implications of our results.
    - And in Section 6 , reestablish our findings, communicate how our data might have effected our results, and talk about our big picture goal.

2 Literature Review

Discuss at least five papers that are closely related to your results (more is better). Explain how they're related. Did you find something similar, or different? Did you look at a different context? Different time period? Different level of detail?

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Rate Memory	Frequency
Excellent	1,297
Very Good	4,753
Good	8,121
Fair	4,816
Poor	965
Don't Know	16
Refused	2
Total	19,970

Table 1: Caption

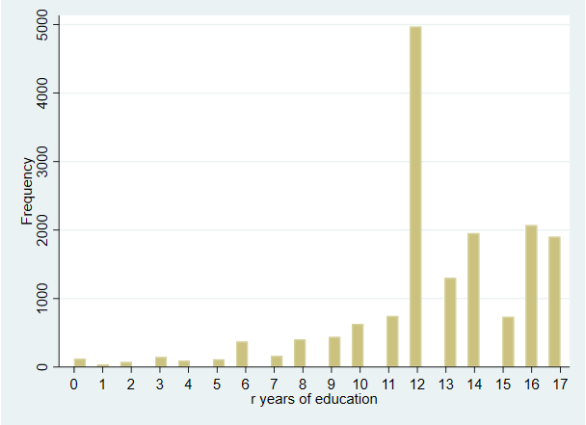

Figure 1: Enter Caption

3 Data

In our data we have a breakdown of different education levels.

———————————— — Frequency ————————————+———— r highest level of education — 0 — 19 1 — 10 2 — 13 3 — 21 4 — 16 5 — 16 6 — 94 7 — 20 8 — 75 9 — 107 10 — 139 11 — 206 12 — 1,252 13 — 449 14 — 602 15 — 203 16 — 749 17 — 505 97 — 53 98 — 16 99 — 2 Total — 4,567 ————————————

———————————— — Frequency ————+———— rate memory — 1 — 1,297 2 — 4,753 3 — 8,121 4 — 4,816 5 — 965 8 — 16 9 — 2 Total — 19,970 ————————————

———————————— — Frequency ————————————+———— compare mem to prev wave- pc — 1 — 6 2 — 163 3 — 48 9 — 1 Total — 218 ————————————

Describe your data. Where you got it from, how it was generated, what variables you'll use, what data cleaning steps you had to take, where your processed data, code and documentation is stored.

In a published paper, a lot of this detail will be in a data appendix. For the purposes of this report, include it all here (this may be the longest section of your report).!

pc273	(1) pb016 1 Freq (Percent)	(2) pb016 5 Freq (Percent)	(3) pb016 8 Freq (Percent)	(4) pb016 9 Freq (Percent)	(5) pb016 . Freq (Percent)
1	6 (0.376)	10 (1.045)			484 (2.682)
3					1 (0.00554)
4					51 (0.283)
5	1,590 (99.62)	947 (98.96)	4 (100)	1 (100)	17,488 (96.92)
8					17 (0.0942)
9					2 (0.0111)
Total	1596	957	4	1	18043

Figure 2: Ever had dementia (PC273) vs college degree (PB016)

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Figure 3: Ever had dementia (PC273) vs college degree (PB015)

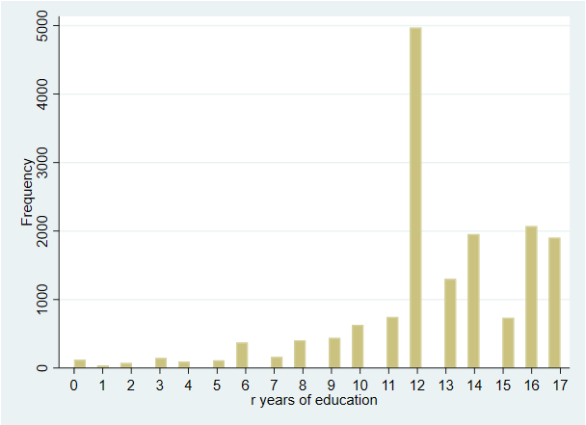

Figure 4: Frequency Histogram of PZ216 (r years of education)

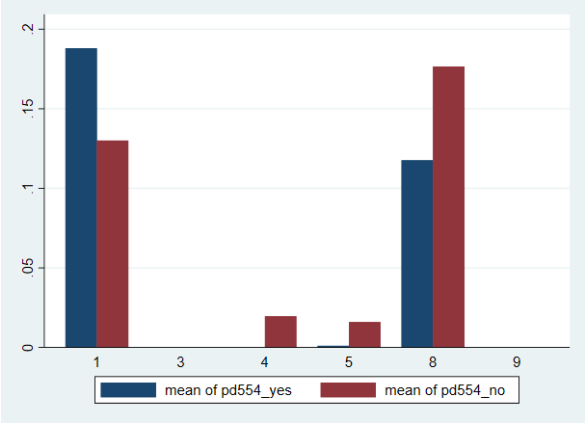

Figure 5: PD554 (get lost in familiar places) over PC273 (ever had dementia)

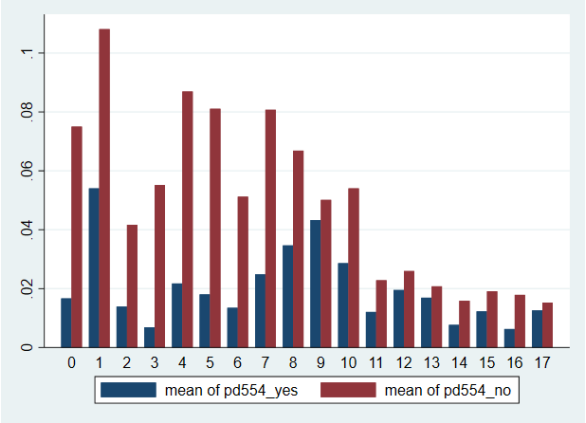

Figure 6: PD554 (get lost in familiar places) over PZ216 (r years of education)

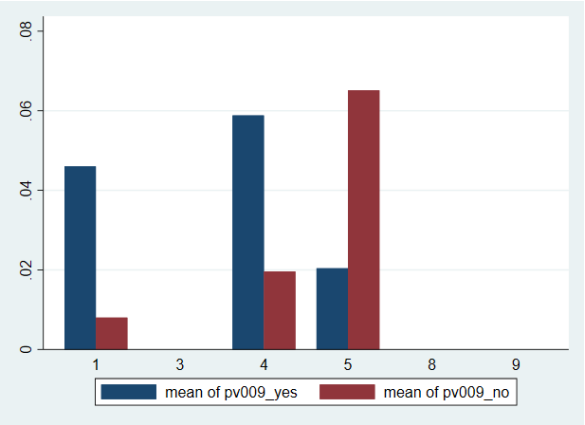

Figure 7: PV009 (forgetful during daily activities) over PC273 (ever had dementia)

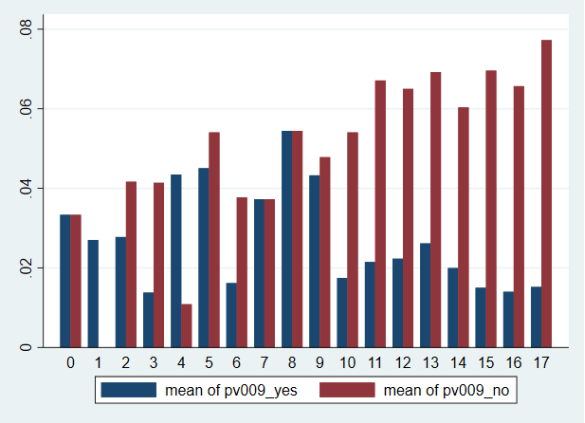

Figure 8: PV009 forgetful during daily activities) over PZ216 (r years of education)

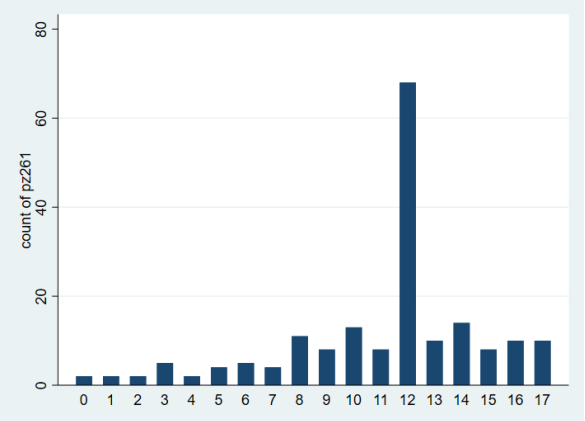

Figure 9: PZ261 (pw Alzheimer's) over PZ216 (r years of education)

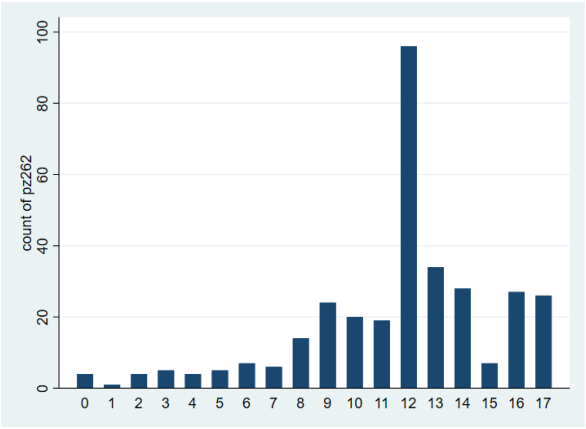

Figure 10: PZ262 (pw dementia) over PZ216 (r years of education)

4 Analysis and Results

We first employed causal diagrams in the early stages of our research to predict the relationships between the variables that were explored during our literature review. We used the articles that we selected when conducting the literature review to frame these diagrams and provide a degree of direction in what we should be looking for in our data. Even though this was made while we were still using the HCAP 2016 dataset, we selected the RAND 2016 dataset based on its similarity to HCAP 2016 and how it just provided more information about our topic. This allowed our causal diagrams to remain relevant. Descriptive statistics was our next mode of exploration and we each selected a different variable from the HCAP 2016 dataset to create bar graphs about. Due to our abandonment of said dataset, the results from this exercise were not helpful. However, we were able to learn how to code for the graphs, their x and y axis titles, exporting to files, and ultimately interpreting our results.

Our hypothesis is exploring the connection between receiving a baseline level of education that eventually improves and strengthens brain function, preventing the development of dementia. We used variables that asked respondents if they have dementia (PC273), if they have Alzheimer's (PZ261), the years of education they had (PZ216), if they get lost in familiar places (PD554), and are forgetful during daily activities (PV009). These variables were manipulated into a variety of bar graphs that acted as the baseline for our tables that we later created. We also cross tabulated PC273 with PB016, which places if the respondent has ever had dementia and if they ever received a college degree. This was also duplicated but with PB015 replacing PB016, so we could see the frequency of dementia diagnosis with the earning of a high school diploma or GED. There was also an exploration into the respondent's themselves rating their own memory (PD101).

The graph of PD554 (getting lost in familiar places) over PZ216 (r years of education) shows a weak relationship between those who get lost/don't get lost and how many years of education they've received, due to how the longer bars that correspond with not getting lost in familiar places are towards the lower years of education. When plotting PD554 against PC273 (ever had dementia), we see the higher frequency of those who responded "yes" to getting lost in familiar places are categorized at 1 on the x-axis, which corresponds to responding "yes" to having dementia. The reverse happens at 5, which is where the respondent is saying they don't have dementia, and more people are also reporting they aren't getting lost in familiar places. This provides some insight into a possible correlation, but it's not strong enough to form a definitive conclusion. However, looking at PV009 (forgetful during daily activities) over PZ216 (r years of education) provides stronger evidence of a relationship. There is a clear steady increase in those who responded "no" to being forgetful as their reported years of education increase. This is our main point of reference for our data and resulting inferences. The interpretation of this in conjunction with our hypothesis hints at our projection being correct due to showing that the more time spent in school decreases the likelihood of developing dementia. When PV009 (forgetful during daily activities) was plotted against PC273 (ever had dementia), we can see that those who responded "yes" to being forgetful during daily activities and also having dementia are the larger spike while at 5 on the x-axis (representing someone who doesn't have dementia), has the largest spike

for not being forgetful. Both of these graphs together support our hypothesis even more as they indicate that the increase in years of schooling stimulates brain activity which further increases cognitive health. In the two cross tabulation tables comparing PC273 (ever had dementia) to PB016 (r college degree) and PB015 (r earned high school diploma/GED) we see a stronger relationship in the PB015 table. On both tables, we focused our attention on 1 (yes) and 5 (no) for ever having dementia, and 1 (yes), 5 (no), and 2 (GED) which only shows up on the PC273 versus PB015 table. The difference in frequency between those who have/do not have dementia and whether or not they have a college degree are quite close in value, which does not indicate a strong correlation to us. However, PC273 compared to PB015 provides a clearer picture of our data in relation to our hypothesis. It is evident that the amount of people who earned a high school diploma or GED have a lower frequency of dementia diagnosis.

5 Discussion

Optional. This is where you would discuss any of the following

- caveats (are there problems with the data that there are no obvious ways to resolve? if so, how might this impact
- future work / next steps
- implications of the results (how your findings – if they were causally identified – might inform policy-making, etc.

6 Conclusion

Re-state (in different words) what you did and what you learned. If your discussion would be short, you can add the discussion after your summary.

Bibliography

Appendix A. Placeholder