Does the attainment of higher education mitigate racial disparities in the uptake of mental health treatment among young adults under 30?

ECO483H1S: Midterm Paper
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Context

The utilization of mental health services is a critical issue in the developed world, one that is particularly salient for young adults aged 18-29 straddling major life transitions such as moving out, pursuing higher education, navigating the job market, and figuring out relationships. Heightened psychological vulnerability necessitates that this population seek access to care early and mitigate long-lasting negative spillovers. Treatment uptake has been unequal across racial groups with cost being the most common barrier, especially for Black and Hispanic adults, along with skepticism about effectiveness.[1] Meanwhile, despite wider access to care, White adults often cite low perceived need. Education—linked to higher income, health literacy, and access to employer-provided insurance—has been posited as an equalizer for racial inequities in therapy uptake.[2, 3] Accordingly, this paper investigates whether the attainment of higher education mitigates racial disparities in the uptake of mental health treatment among young adults under 30, measuring the interaction between education and race.

Methodology

This analysis utilized data from the National Survey on Drug Use and Health's (NSDUH) Public Use Files for the 2015-2019 period, comprising self-reported measures related to the socioeconomic characteristics and consumption of mental health services from a nationally representative sample of adults in the United States.

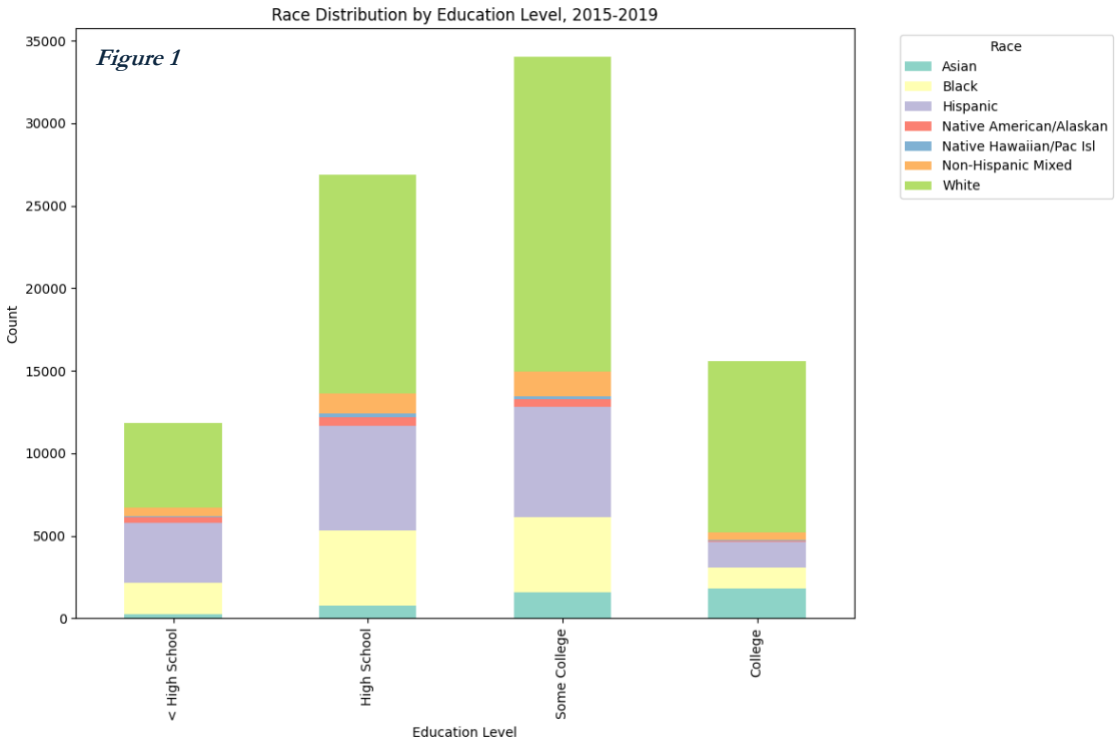
Upon extracting 18 variables from this dataset and visualizing their distributions, I dropped those for which more than 90% of responses were missing (coded as LEGITIMATE SKIP). Further data cleaning entailed recoding and transforming the remaining variables, checking for missing values, and exploring the relationships between demographic variables (age, education, race) and therapy uptake over time. Given my focus on young adults aged 18-29, other age categories were dropped.

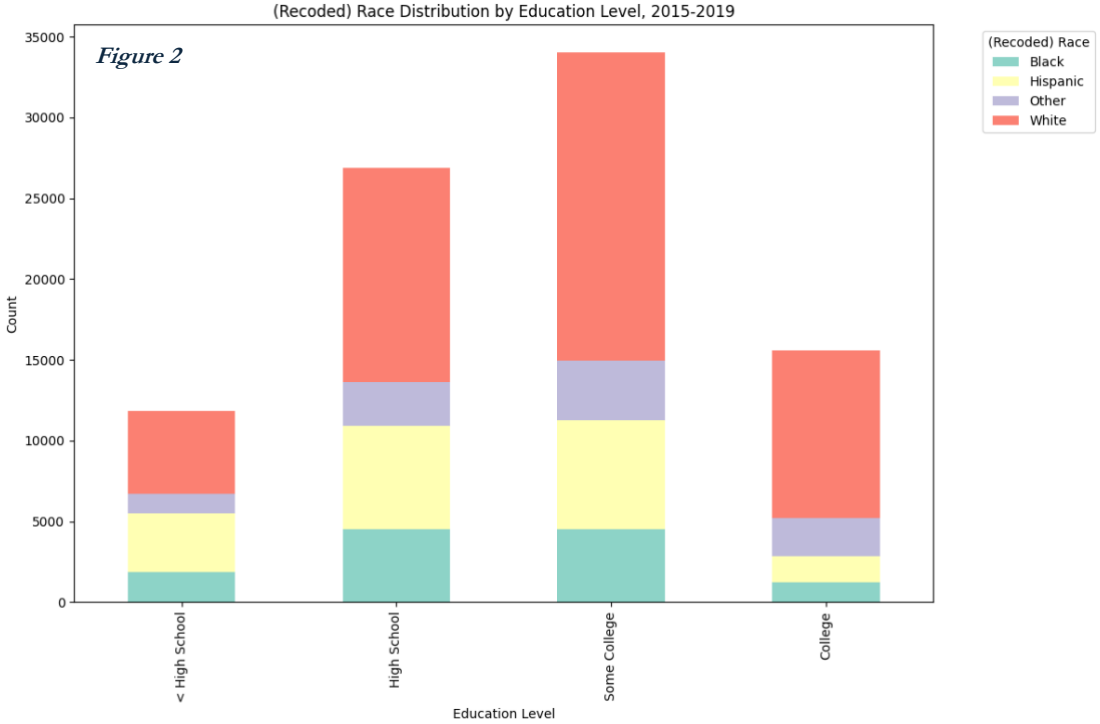
My two-pronged empirical methodology involved data visualization techniques (bar plots, line plots, correlation matrices) and several logistic regression analyses to investigate the independent and interactive effects of education and race on therapy uptake. The first, baseline regression model examined the following relationship:

$$\text{THERAPY\_UPTAKE} = \beta_0 + \beta_1 \cdot \text{EDUCATION} + \beta_2 \cdot \text{RACE} + \epsilon$$

Using a stacked bar plot, Figure 1 below, I found sparse data for 3 race categories: Asian, Native American/Alaskan, and Native Hawaiian/Pacific Islander. Grouping them together in an 'Other' bin to stabilize my model, I ran my second regression:

$$\text{THERAPY\_UPTAKE} = \beta_0 + \beta_1 \cdot \text{EDUCATION} + \beta_2 \cdot \text{RACE\_RECODED} + \epsilon$$



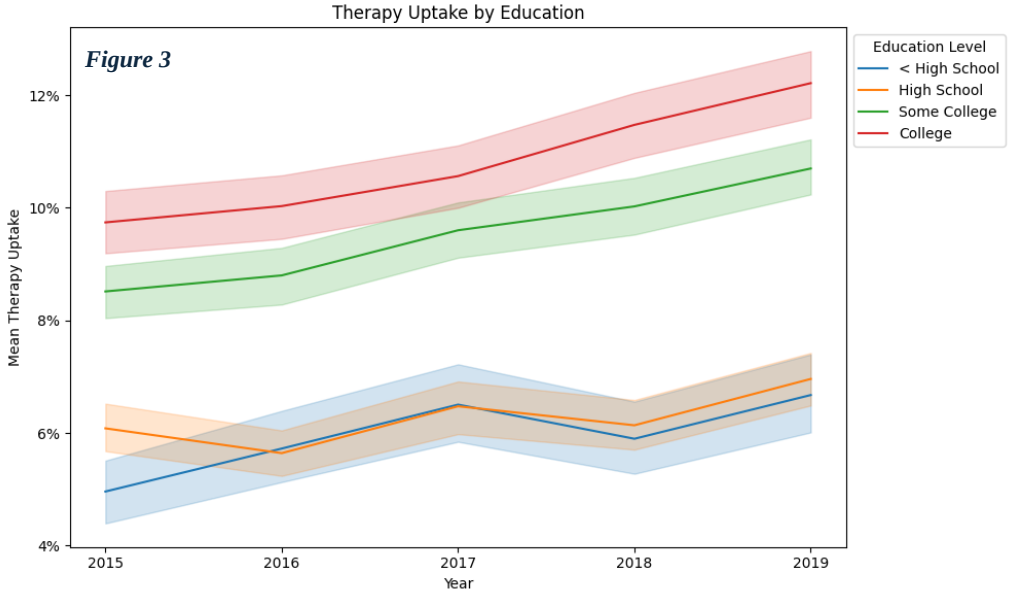


Next, I incorporated an interaction term between education and race into the third regression to test for potential moderating effects on the take-up of mental health services, as pertaining to my research question:

$$\text{THERAPY\_UPTAKE} = \beta_0 + \beta_1 \cdot \text{EDUCATION} + \beta_2 \cdot \text{RACE\_RECODED} + \beta_3 \cdot \text{EDUCATION} \cdot \text{RACE\_RECODED} + \epsilon$$

Finally, I computed marginal effects to reveal whether and how much education and race interact in the utilization of mental health treatment among young adults.

I employed a logistic regression given its intuitive probability predictions as well as the binary nature of the dependent variable. Approximately linear relationships between both categorical variables AGE and RACE versus THERAPY_UPTAKE are demonstrated by Figures 3 and 4, which lack significant outliers, so these statistical assumptions were met.



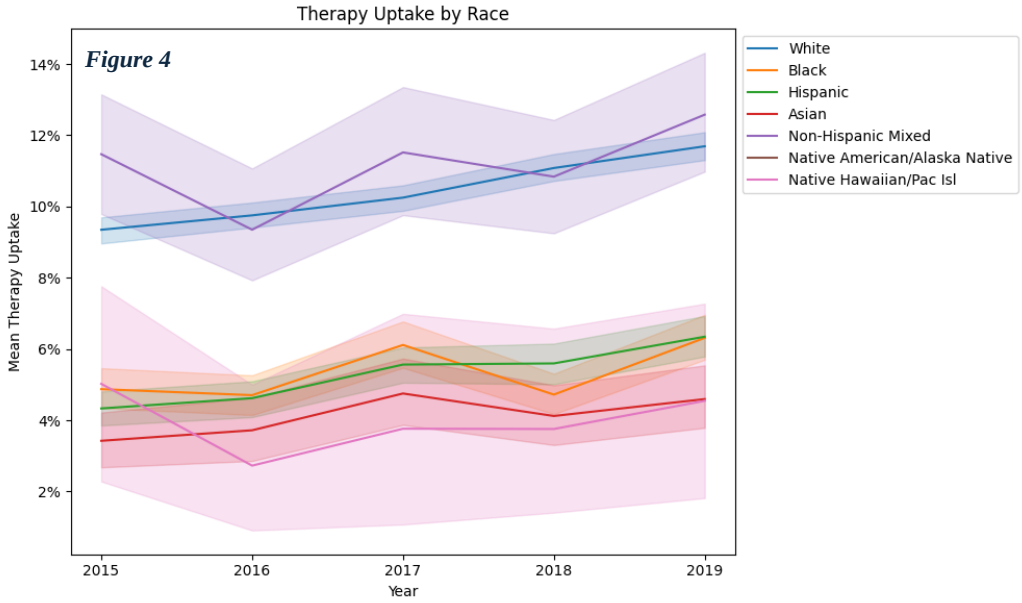
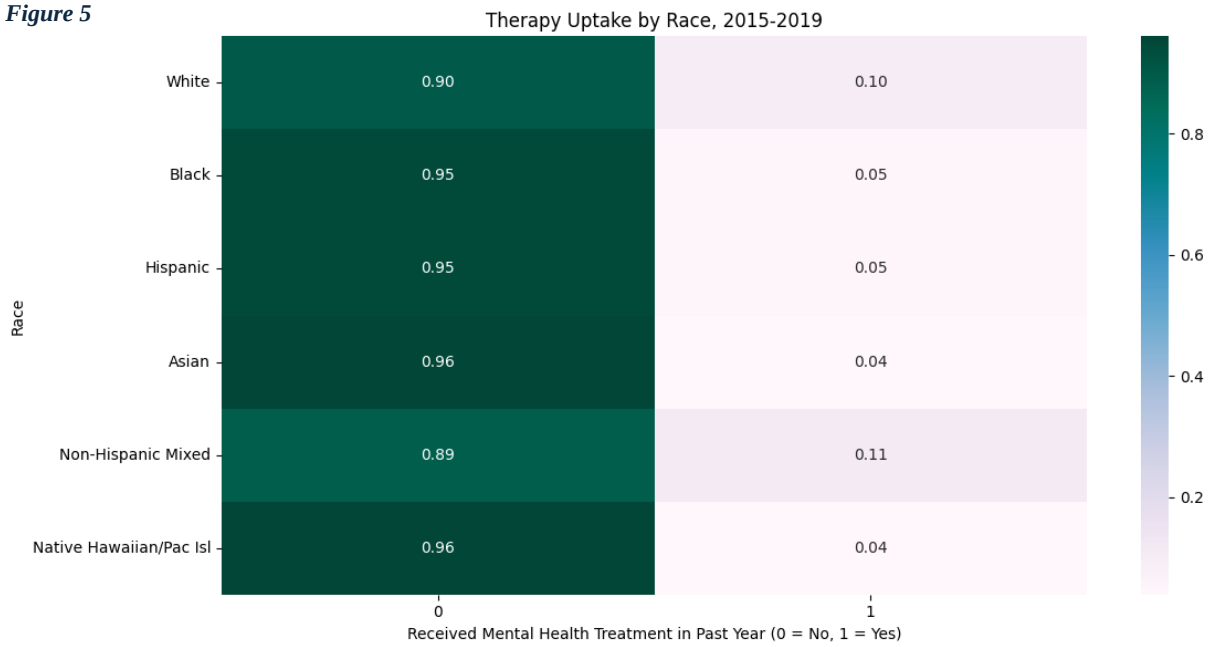


Figure 5



The independence assumption, however, may not have held given legislative changes during the chosen time period, such as mental health provisions under Sections 14001-14029, 8001-8004, and 9006 of the *21st Century Cures Act (2016)* expanding access to care through state-specific programs and funding agreements.[4] This could have produced geographic clustering effects, although this seems unlikely given NSDUH's national scope and random sample. Residual effects from the *Affordable Care Act (2010)* improving utilization of mental health services for adults under 26 raises concern for a potential violation here.[5]

A conceivable limitation of my empirical approach is that I do not control for income in my regression analyses, which tends to be endogenous to education. Conversely, it is also highly correlated with education and race so including this confounder may have violated the no multicollinearity assumption for logit regressions, biasing my estimates.

Analysis of Results

Table 1

	Coefficient	SE	P-value	Lower 95% CI	Upper 95% CI
Intercept	-3.163***	0.055	0.000	-3.270	-3.056
High School	-0.079*	0.044	0.073	-0.166	0.007
Some College	0.319***	0.041	0.000	0.238	0.399
College	0.385***	0.045	0.000	0.297	0.473
Hispanic	0.210***	0.054	0.000	0.105	0.315
Other	0.378***	0.058	0.000	0.263	0.492
White	0.893***	0.046	0.000	0.804	0.982

Table 1 displays the core findings of the second regression, after collapsing race categories. Compared to respondents who did not complete high school, those with some college experience

and a college degree were significantly more likely to have received mental health treatment in the given survey year. The marginally significant negative coefficient for high school diploma holders suggests that improvements in uptake are limited to educational attainment beyond high school. Furthermore, these results highlight stark racial disparities: compared to Black respondents, those identifying as White, Hispanic, or "Other" were all significantly more likely to have received therapy. White individuals particularly exhibit the highest uptake, consistent with literature pointing to systemic barriers and cultural stigmas as impediments to mental health treatment amongst racialized peoples.[3]

Table 2

	Coefficient	SE	P-value	Lower 95% CI	Upper 95% CI
Intercept	-2.867***	0.102	0.000	-3.067	-2.668
High School	-0.481***	0.131	0.000	-0.737	-0.225
Some College	-0.106	0.123	0.390	-0.347	0.135
College	0.352**	0.149	0.018	0.061	0.643
Hispanic	-0.365***	0.134	0.006	-0.628	-0.102
Other	0.378**	0.149	0.011	0.085	0.670
White	0.585***	0.113	0.000	0.364	0.805
High School x Hispanic	0.636***	0.169	0.000	0.306	0.967
Some College x Hispanic	0.708***	0.158	0.000	0.397	1.018
College x Hispanic	0.722***	0.191	0.000	0.348	1.096
High School x Other	0.199	0.189	0.291	-0.170	0.569
Some College x Other	0.177	0.175	0.311	-0.166	0.520
College x Other	-0.567***	0.203	0.005	-0.964	-0.169
High School x White	0.428***	0.143	0.003	0.149	0.707
Some College x White	0.442***	0.134	0.001	0.180	0.705
College x White	0.025	0.159	0.873	-0.286	0.337

Table 2 displays the core findings from the main regression including the interaction term. Education effects remain consistent with prior results: although higher education generally facilitates uptake, this effect is not uniformly positive across educational attainment categories as we might expect. Race effects in this regression are especially stark for Hispanic respondents, who are significantly less likely to engage in therapy relative to their Black counterparts. The interaction terms reveal how much of the race gap in therapy uptake is closed by education. Positive and statistically significant for Hispanic respondents across all educational levels, this indicates that higher education improves uptake for this racial stratum much more than the reference category of Blacks. The interaction term for White college graduates is insignificant; they experience diminishing returns to education in the context of utilizing mental health services compared to their less-educated peers. Interestingly, the interaction term for college graduates in the "Other" category is negative and significant; higher education fails to universally increase therapy uptake across races. Education helps close the gap for some races more than others

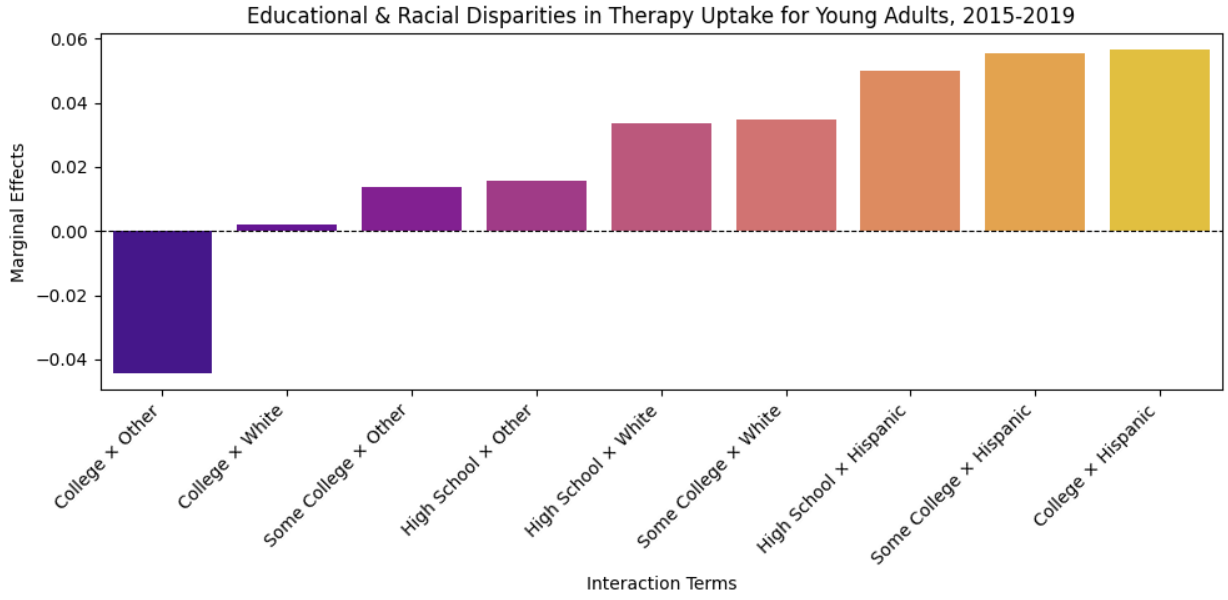
Results

Table 3

	dy/dx	SE	z	P>|z|	[0.025	0.975]
High School	-0.038	0.010	-3.681	0.000	-0.058	-0.018
Some College	-0.008	0.010	-0.859	0.390	-0.027	0.011
College	0.028	0.012	2.367	0.018	0.005	0.050
Hispanic	-0.029	0.010	-2.724	0.006	-0.049	-0.008
Other	0.030	0.012	2.531	0.011	0.007	0.052
White	0.046	0.009	5.194	0.000	0.029	0.063
High School x Hispanic	0.050	0.013	3.774	0.000	0.024	0.076
Some College x Hispanic	0.055	0.012	4.465	0.000	0.031	0.080
College x Hispanic	0.057	0.015	3.781	0.000	0.027	0.086
High School x Other	0.016	0.015	1.057	0.291	-0.013	0.045
Some College x Other	0.014	0.014	1.013	0.311	-0.013	0.041
College x Other	-0.044	0.016	-2.795	0.005	-0.075	-0.013
High School x White	0.034	0.011	3.002	0.003	0.012	0.055
Some College x White	0.035	0.010	3.306	0.001	0.014	0.055
College x White	0.002	0.012	0.160	0.873	-0.022	0.026

Table 3 presents findings from the marginal effects analysis of the last regression, parsing through the granularity to clarify how education and race jointly affect the probability of therapy uptake. Focusing on the interaction terms, we find that education does indeed mitigate some racial disparities in seeking mental health services. For Hispanic individuals, moving from less than a high school education to a college degree raises the probability of uptake by approximately 5.7 percentage points, reinforcing the critical role of education in improving utilization within Hispanic communities. While having a high school diploma or some college experience increases uptake for White individuals, this effect virtually disappears for the college graduate cohort. Notably, college education appears to have a negative effect among those in the "Other" racial category; considering the vast differences in cultural norms and experiences between Asians, Native Americans, and Native Hawaiians, this should be interpreted with caution.

Figure 6



Ultimately, these results suggest education can be a viable pathway toward mitigating racial disparities in the uptake of mental health treatment among young adults under 30, but only to an extent—having the greatest impact among lower-educated racial minorities—and not universally; other factors such as structural barriers, cultural perceptions, and legitimate access to care likely contribute. The interaction between education and race warrants further investigation, particularly along dimensions of socioeconomic status and geography.

References

1. *Racial/Ethnic Differences in Mental Health Service Use among Adults*. HHS Publication No. SMA-15-4906., Substance Abuse and Mental Health Services Administration (SAMHSA), 2015, https://www.samhsa.gov/data/sites/default/files/MHServicesUseAmongAdults/MHServicesUseAmongAdults.pdf.
2. Gonzalez, Jodi M., et al. 'How the Relationship of Attitudes toward Mental Health Treatment and Service Use Differs by Age, Gender, Ethnicity/Race and Education'. *Social Psychiatry and Psychiatric Epidemiology*, vol. 46, no. 1, Jan. 2011, pp. 45–57. *DOI.org (Crossref)*, https://doi.org/10.1007/s00127-009-0168-4.
3. Ahad, Ahmed A., et al. 'Understanding and Addressing Mental Health Stigma Across Cultures for Improving Psychiatric Care: A Narrative Review'. *Cureus*, May 2023. *DOI.org (Crossref)*, https://doi.org/10.7759/cureus.39549.
4. *Mental Health Reform Provisions in H.R. 34, the 21st Century Cures Act*. American Psychiatric Association, https://www.psychiatry.org/File%20Library/Psychiatrists/Advocacy/Federal/Comprehensive-

Mental-Health-Reform/APA-Summary-Mental-Health-Reform-Provisions-21st-Century-Cures-Act.pdf.
5. McIntyre, Adrianna. 'Study: Obamacare Helped High-Risk Young Adults Get Mental Health Treatment'. *Vox*, 5 Aug. 2014, https://www.vox.com/2014/8/5/5968867/obamacare-increased-mental-health-treatment-among-young-adults-who.