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Despite an overall decline in poverty rates the last 20 years, there persists major differences in poverty levels amongst minority racial and ethnic groups compared to the majority group. I study the poverty level of four different minority races and ethnicities and compare it to the poverty levels of white Americans. Additionally, I study the poverty level of individuals of poor health and compare it to those of fair, good, very good, or excellent health to determine whether such differences pertain to discrimination in both the labor and health care markets. To determine this, My sample is a cross-section from the IPUMS Health Surveys: National Health Interview Surveys (NHIS).

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Despite an overall decline in poverty rates the last 20 years, there persists major differences in poverty levels amongst minority racial and ethnic groups compared to the majority group. I study the poverty level of four different minority races and ethnicities and compare it to the poverty levels of white Americans. Additionally, I study the poverty level of individuals of poor health and compare it to those of fair, good, very good, or excellent health to determine whether such differences pertain to discrimination in both the labor and health care markets. To determine this, My sample is a cross-section from the IPUMS Health Surveys: National Health Interview Surveys (NHIS). I use an OLS regression analysis to determine the effect of race, ethnicity and health status on poverty status as well as the effect of race on health status. Results show that minorities alone are expected to be more likely to be in poverty, compared to White individuals. Similarly, poor health individuals are expected to be much more likely to be in poverty than those of above the poor health status. Additionally, after controlling for education, socioeconomic and demographic variables, American Indians and African Americans are more or most likely to be in poverty compared to White Americans. Lastly, my analysis tests for interactions between minority status and poor health status.

I. Introduction

Since the early 1990s, there has been an overall decline in poverty for all major race and Hispanic origin groups, but there remains a persistent difference in the portion of people living in poverty among racial and ethnic groups. From 2018 and 2019 these poverty rates were at historic lows for African Americans and Hispanics, at 18.8% and 15.7%, unlike non-Hispanic White

Americans who remained at a "normal" low of about 7.3% (Creamer 2020). Although this reflected a positive gain for minority race and Hispanic groups, there remains significant disparity between them and the majority White group, a difference of 8.4% for Hispanics and 11.5% African Americans (Creamer 2020). This suggests a constant correlation between race/ethnicity and poverty rates. Over the last several years and throughout much of U.S history, there has been a consistent association between race/ethnicity and health as well (Barr, 2019).

Just as there has been a decline in overall poverty rates, there has been a decline in death rates for all racial and ethnic groups over the last several years. Although death rates have declined, a gap between certain racial and ethnic groups remains constant. For example, a CDC graph representing age-adjusted mortality rates in the United States by race from 2010-2016, shows that African Americans have consistently reported to have the highest mortality rate (18%), which is greater than the White American mortality rate in 2016 (Barr, 2019). American Indians' mortality rates remained right below African American's mortality rates, still well above the rates of White Americans. Additionally, and according to another CDC graph, African American males stood out in having the lowest life expectancy at birth, compared to that of White males with a difference of 5 years in 2016. Surprisingly, the highest life expectancy at birth was taken by Hispanic females, about a 12-year difference compared to African American males and 8 years compared to White males (Barr, 2019).

After noticing significant disparities in race and ethnic groups when it comes to health and overall poverty rates, my research study will further explore such differences and aim to determine the poverty level. I intend to analyze racial and ethnic differences in poverty. My study utilizes a 2018 sample from the IPUMS National Health Interview Surveys (NHIS) to further explore the relationship between these racial and ethnic groups and self-reported health

status in predicting poverty level, before and after controlling for socioeconomic factors. I present theories of discrimination and the human capital theory to help explain poverty levels that may suggest health care or labor market discrimination. Based on the presented background and theoretical framework, I expect to find significant differences in poverty status amongst race and ethnic groups and those individuals of poor health, such that minority groups and people of poor health will be more likely to be in poverty compared to the majority group and people of good health. Beyond this, my study will aim to answer the following questions:

1. To what extent does health status and race/ethnicity affect poverty status?
    1. Does this effect differ once socioeconomic factors are controlled for?

A. To what extent do race and ethnicity affect health status?

II. Literature Review

Harold S. Luft (1975) focuses on the effect of poor health on a variety of earnings components which he identifies as, labor force participation, weeks worked per year, hours worked per week, and earnings per hour. Luft studies the labor force market using a national sample of all U.S. adults in 1967 from ages 18 to 64 from the Survey of Economic Opportunity (SEO), by running separate regressions for each of the nine different components for an equation to determine which impact of sickness is most significant. The sample is split by sex, race, and health status to estimate each component. Luft examines how labor market performance varies between persons who identify their health status as “well” with those who identify as “sick”. He runs an equation that is drawn from previous labor force participation literature and with the following independent variables: age, age squared, a dummy variable for a person’s attendance in school during the week of the survey, variables for the number of years of education, five variables defining family such as if an individual is married with the spouse around and married

at some time but with spouse currently absent, and three dummy variables for residents in urban locations. The study's results strongly indicate that poor health affected all components of the earnings function (Luft, 1975). The results also provide that there is a difference in which poor health status affects different groups, for example, black men were found much more likely to drop out of the labor force or work fewer weeks than white men, similar to women, black women were more likely to drop out and decrease their hours per week. Luft suggests that because of the educational differences and jobs being opened to both races, whites with disabilities are more easily able to switch jobs than blacks with disabilities. Black people, on the other hand, aren't nearly as flexible with job switches and they have lower education, this will cost them more of their earnings and they are much more likely to leave the labor force if they become ill as well (Luft, 1975).

Since the reviewed literature's results strongly suggested that poor health affects all components of earnings, it may be safe to say that poor health also affects overall poverty position to an extent. In Luft's study, health status also plays a role in one's overall earnings, and there are noticeable differences amongst black men and women compared to white men and women and their ability to switch jobs and drop out of the labor force if sick. I focus on the impact of poor health status and race, both separately and combined as interaction variables in predicting poverty level instead of earnings. I find that race and health can be a direct indicator of being in poverty and that there can be potential differences between race and ethnicity when determining that chance and overall earnings. I expect to see similar results as Luft that suggest some form of labor market discrimination and health care discrimination, for example, when it comes to minority race and ethnic groups having health care access, education experience or different income/earnings with same level of skills. Luft's research supports my thesis that

individuals from minority racial and ethnic groups and those that have poor health are much more likely to be below the poverty line after controlling for differences in educational attainment, and other determinants of overall income.

III. Theory and Hypothesis

This research is based on the human capital theory, it follows that greater human skill, knowledge, education, and health increases overall productivity and therefore, increases overall earnings. Since I will also be exploring the relationship between health status and poverty status, the human capital theory helps explain that those of poor health will have lower productivity, thus decreasing earnings, which makes one more likely to be in poverty. The human capital theory explains the opposite as well, that very good health increases productivity, and promotes higher earnings, and lessens the likelihood to be in poverty.

My study will also be based on theories of discrimination: taste discrimination and statistical discrimination. Taste discrimination can be described as labor market discrimination in which individuals, like employers, discriminate based on race, religion, sex, or color regardless of their productivity. It is based on the "tastes" of people, referred to as preferences in economics. In the case of this study, employers may discriminate against certain racial and ethnic minorities. This leads to the possibility that these individuals are either being offered jobs less frequently or worse jobs than those of a majority race, based on employer's tastes and therefore, lead them to earn lower wages and have fewer overall earnings for the same type of work or skills. If individuals of minority races and ethnic groups are earning less all together, they will be more likely to be in poverty than individuals of the majority racial groups, who are "preferred". Statistical discrimination may explain discrimination in the healthcare market. According to Ana

Balsa and Thomas McGuire (2001), statistical discrimination refers to how an employer, without having an intention to discriminate, might still make discriminatory health or treatment related decisions. The idea here is that since an employer does not have detailed information on the potential productivity of individuals, the employer uses perceived group characteristics to make employment and pay decisions. In reference to my research study, since doctors do not have detailed information on the potential health need or treatment of individuals, they use perceived group characteristics to treat. Furthermore, doctors may be treating two individuals of equal health need very differently from one another based on their racial and ethnic group category.

This study aims to answer a series of questions regarding the effect of race, ethnicity, and health status on poverty status, with the addition of other controlled socioeconomic factors. Based on previous literature and theory, I hypothesize that:

A. Race and ethnicity, health status and the interaction of both will play a strong role in predicting poverty status. Specifically, I hypothesize that:
    a. Racial minorities and Hispanics will have a higher probability of being in poverty than whites.
    b. Those with poor health will be more likely to be in poverty than those who do not have poor health.
    c. A positive interaction between minority status and poor health in the determination of poverty status. That is, minorities will be disproportionately affected by poor health compared to whites.

If my analysis supports these three hypotheses, there could be discrimination in the labor market and/or health markets.

B. Additional socioeconomic variables such as education, gender, age, marital status, employment status, health coverage insurance, and doctor's visit the past two weeks similarly play a strong role in predicting poverty.
C. Self-reported race or ethnicity alone will play a significant role in determining or predicting health status. Specifically:
    a. Those who belong in a minority race or ethnic group are more likely to have poor health status than those who are part of the majority group. If this is true, differences in health status across groups could suggest discrimination in health care markets.

The next section of the paper describes the data used in the study's analysis and presents the variables for three different models. These models are three equations, Model A, B, and C. Model A serves as a base model in which it does not control for socioeconomic factors when predicting poverty. Model B does control for all socioeconomic variables when predicting poverty. Model C is a health status function, which only uses race and ethnicity in predicting poor health status and determining whether there are significant differences amongst the four racial and ethnic groups in determining poor health. A unique interaction in my regression equation for poverty is the interaction of variables "Poor_health" and "Race/Ethnicity." The reason for including these interactions is to see if the combination of minority status and poor health has a significant multiplicative effect on the likelihood of being in poverty.

IV. Data

This study utilizes a 2018 sample from the Integrated Public Use of Microdata Series (IPUMS) of the National Health Interview Survey (2019). The NHIS collects information from

individuals from the U.S. population including those not institutionalized, on their health, health care access, health behaviors, etc (Lynn,et al, 2019). Furthermore, IPUMS Health Surveys provides a series of socioeconomic and demographic variables, utilized in determining poverty status. The combination of the demographic, socioeconomic, and health specific information available is ideal for this study as it allows for inclusive research of the relationship between health, race/ethnicity and poverty, along with other economic variables.

My sample restricts individuals older than 26 years old living in the United States. The main reason for excluding individuals who are less than 26 years old is to give members of the sample enough time to complete their college education. It may also be that many individuals from the sample are pursuing higher education after they are 25 years. The sample includes individuals of races such as White, Black/African American, Asian, American Indian/Alaskan Native, and of Hispanic ethnicity. In IPUMS, the POORYN variable used for poverty status indicates whether family income was above or below the poverty level. The poverty status of a family group is assigned to each individual of the family, making POORYN a person-level variable. It is also calculated for adults who live alone, and in those cases, POORYN is calculated based on an individual's income (Lynn A. et al., 2019). The HEALTH variable used in my study to represent health status rates of an individual's general health, as self-reported by the person in question or evaluated by a family member (Lynn A. et al., 2019). HEALTH used a likert scale that ranged from 5 categories of health status, such as excellent health, very good health, good health, fair health, and poor health. I chose to only account for individuals whose general health was of poor health and define any health above poor health to work as a reference in my study. The reason for only including the poor health variable is to explore any possible differences in my sample's races and Hispanic ethnicities when determining likelihood of

poverty in comparison to those who are in fair, good, or excellent health. In my study, any individuals above "poor health" serve as a reference group in my regression analysis. Similarly for the RACE and HISPYN variables in IPUMS, I choose to use individuals that self-reported as African American, American Indian, Asian, White or Hispanic for my study. Individuals that self-reported as White served also as a reference group in my regression models, further developed later in the paper. In my study, I utilize "below_poverty" as a dichotomous dependent variable and "poor_health" as a dichotomous independent variable. Being African American, American Indian, or Asian race or Hispanic ethnicity were also considered independent variables for predicting being in poverty, and Whites are the reference group. I chose to use the interactions of race or ethnicity with poor health as additional independent variables in the equation. The reason for these interactions is to potentially determine a positive interaction effect of being a minority and having poor health on poverty. In sum, the IPUMS data presents the opportunity to determine the effects of health, race, ethnicity and other demographic and socioeconomic variables on poverty.

Table 1 below demonstrates some descriptive statistics of the 2018 sample of individuals of four different races and Hispanic ethnicity. "Below Poverty" is a dichotomous variable in my study, indicating whether family income is below poverty level. The poverty status of a family group is assigned to each member of the family, making POORYN a person-level variable (Lynn et al, 2019).

Table 1: Sample Descriptive Statistics

	White	Hispanic	African American	American Indian	Asian
Sample Size	38,763	6,700	5,345	563	2,985
Dependent Variable					
Below Poverty	6.66%	14.60%	16.45%	25.93%	6.90%
Independent Variables					
Poor Health	3.09%	3.42%	4.86%	7.82%	2.91%
Fair to Excellent Health	96.91%	96.58%	95.14%	92.18%	97.09%
Insurance Coverage					
Insured	91.82%	78.24%	89.39%	88.94%	93.57%
Uninsured	8.18%	21.76%	10.61%	11.90%	6.43%
Education Level					
Some College	15.83%	12.61%	18.48%	15.28%	8.98%
Bachelor's Degree	21.58%	11.96%	15.04%	8.53%	30.89%
Master's Degree	10.07%	4.21%	7.11%	3.73%	17.09%
Professional Degree/PhD	1.79%	0.93%	0.82%	0.36%	2.65%
Doctoral Degree	1.83%	0.63%	1.12%	0.36%	3.95%
Married	64.35%	60.48%	41.96%	44.23%	75.31%
No Doctor's Visit	76.66%	83.40%	78.15%	80.46%	84.59%

Notes: Data from IPUMS Health Surveys NHIS 2018 sample. Only individuals of 26+ are included in the sample. The data subset we used has 48,722 observations of 27 variables.

As Table 1 shows, American Indians are more likely than any of the other groups to be below the poverty level. American Indians were least represented in the sample. Although Table 1 shows White Americans to be least likely to be below the poverty line, the Asian group is not very different from that of White Americans. 6.66% of White American in the sample were below the poverty level and only 6.90% amongst the Asian groups were below the poverty level. The Hispanic and African American groups are most similar in sample size and percent below the poverty line at 14.60% and 16.45%. A slightly different pattern followed for those of poor health. Table 1 shows once again, American Indians to be more likely than the rest of the racial and ethnic groups to have poor health. About 7.82% of American Indians in the sample have poor health. However, this time Asians are the least likely to have poor health, given less than 3% of their population identifying as having poor health, while 3.09% of the White Americans in the sample have poor health. 3.42% of Hispanics and 4.86% of African American have poor health. In line with human capital theory, American Indians had the highest share of their population fall below poverty, and thus the highest share of their sample size to have poor health as well. Similarly, White Americans and Asians demonstrated the lowest shares of poor health persons and also had the lowest share of persons in their groups to be in poverty. Table 1 highlights that Hispanic group is more likely to be uninsured, while Asians are least likely to be uninsured. Furthermore, the Asian and White group are consistently more likely to acquire a higher education degree (from a Bachelor's to Doctoral degree) than the Hispanic, African American, and American Indian group. This finding may suggest that the minority groups, American Indians, African Americans, and Hispanics are at a disadvantage when it comes to insurance coverage, education and health compared to the White and Asian groups in the sample.

American Indians are the group least likely to pursue a higher education level, having less than half of their sample size pursuing a PhD and Doctoral degree.

Given the information in Table 1, we can conclude that the sample contains mostly insured, healthy and married individuals, represented mostly by the White group, although Asians were right beside the share of Whites in such categories.

Dependent Variable

Table 2 defines the variables that are used in the regression analysis. The dependent variable for the initial OLS regression equations is “Below Poverty”, a dichotomous variable giving a value 1 if an individual is below the poverty level and 0 if an individual is above the poverty level.

Independent Variables

The main independent variables in my research study are self-reported Race/Ethnicity and poor health status. The remaining independent variables are proxies for educational attainment, basic demographic and socioeconomic variables, such as age, gender, marital status, employment status and other additional variables for insurance coverage and doctors’ visits. Table 2 below defines these variables and indicates the hypothesized relationship between the dependent variable and independent variables.

Table 2: Description of Regression Variables

Variable Name	Description	Expected Sign
Dependent Variable		
Poverty	1= Below poverty threshold 0= Above poverty threshold	N/A
Independent Variables		
Race	African American American Indian/Alaskan Native Asian	Positive
Ethnicity	1= Yes, of Hispanic ethnicity 0= No, not of Hispanic ethnicity	Positive
Health Status	1= Poor health status 0= Above poor health status (Excellent health, Very good health, Good Health, and Fair health)	Positive
Educational Attainment	Respondents Some college Bachelor's degree Master's degree Professional Degree Doctoral Degree	Negative
Age	Age of Respondent in years	Negative
Gender	1= Male 0= Female	Negative

Marital Status	1= Married 0= Not married	Positive
Health Insurance	1= Has no insurance coverage 0= Has insurance coverage	Positive
Employment Status	1= Unemployed 0= Employed	Positive
Doctor's Visit (in the Past 2 Weeks)	1= Has not had a doctor's visit 0= Has had a doctor's visit	Positive

V. Empirical Model

To measure determinants of poverty, a series of linear (OLS) regression models are utilized, Model A, B and C. These models will attempt to answer my previously stated research questions. Model A will measure poverty status with a dummy variable (Below_poverty), where a value of 1 indicates the respondent has family income below the poverty line. Independent variables include measures of poor health status, race, ethnicity, and the interaction of poor health and the specific race or ethnicity. Model A will demonstrate whether there is a relationship with having poor health, being of a certain race or ethnicity, or both and being below poverty. In other words, Model A estimates the expected likelihood of an individual to be below the poverty line based on their self-reported race or ethnicity, poor health or both (an individual's poor health and specific self-reported race or ethnicity). For example, I expect the likelihood of being below the poverty line to be greater for an African American individual than a White individual and greater for an individual of poor health than one of fair, good, very good, or excellent health. Similarly, I expect the likelihood of being in poverty to be greater for an African American of poor health than a White American of excellent health. Model B is a revised version of Model A as it includes the exact independent variables previously mentioned but will control for demographic and socioeconomic variables. That is, Model B will predict

poverty status (Below_poverty) as a function of race ethnicity and health status like Model A, but also controls for gender, age, education level, employment status, health insurance coverage, and whether an individual has had a doctor's visit in the past two weeks. I expect for Model B's coefficients to the race variables to change slightly from Model A's coefficients because racial or ethnic groups have different education levels, employment status, insurance coverage, age, gender, etc. Again, I expect for the minority race and ethnic groups, such as Hispanic, African American and American Indian individuals to be more likely to be in poverty than those of the majority group even after controlling for socioeconomic factors. The linear regression analysis models allow the relationship between poverty based on health, race or ethnicity, and socioeconomic factors.

Model A with Poor Health, Race, Ethnicity and the Interaction of Poor Health and Race/Ethnicity

$$Below\ poverty = \beta_0 Poor\ Health + \beta_2 African\ American + \beta_3 American\ Indian + \beta_4 Asian + \beta_5 Hispanic + \beta_6 Poor\ Health * African\ American + \beta_7 Poor\ Health * American\ Indian + \beta_8 Poor\ Health * Asian + \beta_9 Poor\ Health * Hispanic$$

I expect all coefficients to be significant, but the coefficients to the interactions of both health status and race or ethnicity to be most significant in predicting poverty status. Model B builds on Model A in that now it incorporates an additional set of socioeconomic and demographic dummy variables to predict below poverty status. Model B will test the significance

of being part of a minority racial or ethnic group, of poor health and the interaction of both once underlying, explanatory factors are considered such as one's educational attainment, age, gender, marital status, employment status, insurance coverage, and doctor's visit in the past two weeks.

Model B: Model A revisited with Socioeconomic and Demographic Variables

$$Below\ poverty = \beta_0 Poor\ Health + \beta_2 African\ American + \beta_3 American\ Indian + \beta_4 Asian + \beta_5 Hispanic + \beta_6 Poor\ Health * African\ American + \beta_7 Poor\ Health * American\ Indian + \beta_8 Poor\ Health * Asian + \beta_9 Poor\ Health * Hispanic + \beta_{10} Education + \beta_{11} Age + \beta_{12} Age^2 + \beta_{13} Male + \beta_{14} Married + \beta_{15} Unemployed + \beta_{16} No\ doctor\ visit + \beta_{17} Insurance\ coverage$$

- Education is a vector of dummy variables that represent the highest educational degree, variables included are Some college, Bachelor's degree, Master's degree, professional degree or PhD, and doctoral degree.

Differences in such demographic and socioeconomic variables in each racial and Hispanic group will predict the likelihood of poverty for each race and Hispanic ethnicity differently. Such differences may suggest discrimination in labor or healthcare markets that lead to significant, potentially very distinct results. Model C utilizes only self-reported race and ethnicity variables to predict health status, specifically whether a certain race or Hispanic group is more or less likely to have poor health compared to the majority race, White group. Model C can potentially suggest health care discrimination exists, based on the impact that minority race

and ethnicities have on health. The reason for model C is to see the raw effect race and ethnicity has on poor health and how each of the coefficients might compare to the white group.

Model C: Predicting Poor Health Using Only Race and Ethnicity

$$Poor\ Health = \alpha_0 + \alpha_1 African\ American\ + \alpha_2 American\ Indian\ + \alpha_3 Asian + \alpha_4 Hispanic$$

IV. Results

This research study's sample included a total of 38,763 White Americans, 6,700 Hispanics, 5,345 African Americans, and 2,985 Asians represented in the study. Additionally, 1,64 individuals, about 3.37%, had poor health status and 47,081 (96.6 %) had anything above that of poor health, in other words, fair health, good health, very good health, or excellent health. 72.94% of those individuals of a poor health status were White, 13.95%were Hispanics, 15.84% were African American, 2.68% were American Indian, and 5.24% were Asian.

As previously stated, I aim to see a relationship between individuals of common minority groups, individuals of poor health, and their poverty level.

The regression results are shown in Table 4. Table 4 presents model A (equation 1) results along with model B results (equation 2) side by side. Model A is the baseline model that regresses only poor health, race/ethnicity, and the interaction of both against poverty level. It consists of four dummy variables indicating self-reported race, self-reported Hispanic ethnicity, self-reported poor health status and an interaction of both for each self-reported race or ethnicity. Model A also does not control for any explanatory socioeconomic factors. Model B adds socioeconomic and demographic variables to Model A. The coefficients to the below poverty

related dummy variables are interpreted in reference to the reference group. For example, the coefficients of a racial minority are interpreted relative to White Americans and coefficients to the poor health variable are interpreted relative to those who are in good health. These coefficients also indicate the expected likelihood of individuals of those groups to be below the poverty line before and after controlling for socioeconomic factors, ceteris paribus.

To make results more understandable, coefficients may be converted into percentages and interpreted as the percentage change in the likelihood of being poor that is predicted. Since poor health is said to affect all components of earnings (Luft, 1975) and overall productivity and performance, according to the human capital theory, I expect those of poor health to decrease their productivity, earn less overall and be more likely to be in poverty. As recently noted, that disparities persist in overall recent poverty rates between minority racial or ethnic groups and majority groups (Creamer 2020). I expect all racial minority and ethnic groups to be more likely to be in poverty than the White native reference group, without controlling for other socioeconomic explanatory factors.

Table 4: Model A and Model B; Linear Regression Analysis Results for Poverty using Health, Race/Ethnicity, the Interaction, and other Explanatory Socioeconomic Factors. (Standard Errors in Parentheses).

	Dependent variable:	
	Below_poverty	
	(1)	(2)
Poor_health	0.168***	0.103***
	(0.013)	(0.012)
African_american	0.099***	0.069***
	(0.005)	(0.005)

American_indian	0.172***	0.136***
	(0.019)	(0.018)
Asian	0.010**	0.020***
	(0.005)	(0.005)
Hispanic	0.082***	0.043***
	(0.004)	(0.004)
Some_college		-0.036***
		(0.003)
Bachelors_degree		-0.058***
		(0.003)
Masters_degree		-0.062***
		(0.003)
Professional		-0.041***
		(0.005)
Doctoral_degree		-0.053***
		(0.005)
Age		-0.002***
		(0.0001)
Male		-0.009***
		(0.002)
Married		-0.061***
		(0.003)
No_visit		-0.011***
		(0.003)
Unemployed		0.108***
		(0.004)
No_coverage		0.096***
		(0.006)
Poor_health:African_american	0.053	0.058*
	(0.033)	(0.032)
Poor_health:American_indian	0.025	0.042

	(0.080)	(0.081)
Poor_health:Asian	0.033	0.030
	(0.050)	(0.049)
Poor_health:Hispanic	-0.016	0.014
	(0.033)	(0.032)
Constant	0.050***	0.204***
	(0.001)	(0.007)
Observations	48,722	48,722
R2	0.042	0.112
Adjusted R2	0.041	0.112
Residual Std. Error	0.267(df = 48712)	0.257(df = 48701)
F Statistic	234.355***(df=9;48712)	308.552***(df=20;48701)
Note:		*p<0.1; **p<0.05; ***p<0.01

According to Model A those who have poor health, have a 16.8% higher probability to be in poverty compared to those who have good health. Being Hispanic has a 8.2% higher probability, African American a 9.9% higher probability, and American Indian a 17.2% higher probability to be below poverty compared to the White group, ceteris paribus. The highest disadvantage lies in being American Indian out of the rest of the minority groups. All of the races, ethnicity and poor health status are significant in predicting below poverty level. None of the interaction variables of poor health and race or ethnicity were significant at predicting poverty.

According to the results of Model B, there are still differences in the probabilities of being poor for minority groups; Hispanic, African American, and American Indian compared to White Americans, even after controlling for socioeconomic and demographic variables.

Model B results show that those of poor health had a 10.3% higher probability to be in poverty than those of good health or above the poor health status. The human capital theory

supports this result. Just as good health is expected to increase one's overall productivity and earnings, poor health decreases overall productivity and earnings, I expect an increase in chances of poverty. Similar to Model A's results, Model B presented American Indians to have a higher probability of 13.6% to be in poverty compared to whites, ceteris paribus. Model B results also show that African Americans had the second highest probability of the groups of about 6.9% higher likelihood to be in poverty, compared to whites, ceteris paribus. Hispanics had a 4.3% higher probability and Asians a 2.0% higher probability. All education levels' coefficients were negative and statistically significant. Having any sort of college education had a 3.6%- 6.2% lower likelihood to be in poverty than respondents who did not have any sort of college education, ceteris paribus. This finding is supported by the human capital theory in that greater knowledge and education increases overall productivity and overall earnings, which I expected to decrease the probability of poverty. Respondents who were married, male, or hadn't had a doctor's visit in the past two week had a lower probability of being below the poverty line. Respondents had a 10.8% higher probability to be in poverty if they were unemployed and a 9.6% higher probability if they did not have insurance coverage. This pattern of results were expectations of my research study. Interestingly enough, the interaction of poor health and the African American variable predicted a 5.8% higher probability to be in poverty, compared to whites of good health, ceteris paribus. This interaction variable was a significant predictor of poverty but only at the 10% significance level, unlike the rest of the interactions with the other of the racial and ethnic groups which were not significant at all in predicting poverty. This result is an example of a multiplicative effect in predicting the probability of poverty. The combined effect of race and poor health has an adverse interactive effect on African Americans.

Theories of Discrimination are supported by the results of my study. Model B's coefficients were slightly lower than Model A's, but these differences still exist, even after controlling for a number of socioeconomic and demographic variables. The variables I controlled for in Model B were all significant predictors of being below poverty. Model B demonstrated race, ethnicity, and poor health to be significant predictors of poverty as Model A did. Model A's coefficients did decrease slightly, given the explanatory factors that were controlled. Differences in minority groups such as American Indian, African American and Hispanic compared to the White and surprisingly enough, the Asian race suggest there is potential for some form of discrimination either in the labor or health care market that results such minority groups to be more prone to poverty than the majority group. This form of discrimination results in minorities being offered jobs less frequently or worse jobs than those of a majority race. For the purpose of my study, minorities being offered less jobs results in them having a higher share of unemployment, but it also makes the overall minority group earn less overall as the majority and more likely to be below the poverty line overall. Results and descriptive statistics also suggest statistical discrimination in both the labor market and healthcare market. You may also suggest some form of health care discrimination. Notice the Table 4 results of Model B, the only significant interaction variable was African American of or with poor health, predicting an expected 5.8% higher probability to be below poverty compared to whites. Previously in Table 1, African American had the second most likely minority group to be of poor health. The African American group was also the second most likely group to be unemployed yet was on the group less likely to not have had a doctor's visit in the past week. This suggests that although African American have had a doctor's visit just as likely as whites compared to the rest of the groups, African American were more likely to have more poor health in their minority group than whites.

This suggests there is potential for statistical discrimination to be present as it refers to how an employer, without having an intention to discriminate, might make health or treatment related decisions. In reference to my research study, when carrying out these decisions, a doctor or nurse may choose to treat based on need which can lead to an unequal treatment of individuals of different race and ethnic groups. Even when African American and Whites seem to be the groups that recently did not have a doctor's visit, as shown in Table 1, compared to the other races that did, the difference in being of poor health is there, and even more noticeable in being poor. The idea here is that since doctors do not have detailed information on the potential health need or treatment of individuals, like African American, they use perceived group characteristics to treat. Furthermore, doctors may be treating a white individual and an African American individual of equal health needs very differently from one another based on their racial and ethnic group category. This difference in treatment may just be what plays a role in there being an additive or multiplicative effect on the African American of poor health having an almost 6.0% likelihood in being below the poverty level.

Table 6 below presents the results Model C (poor_health equation) results. Model C is the model that only regresses race and Hispanic ethnicity to predict poor health. Model C does not control for any socioeconomic and demographic variables, as I aim to see the raw effect race and ethnicity had on health status.

Table 6: Model C, Linear Regression Analysis Results for Poor Health using Race and Ethnicity Only

	Dependent variable:
	Poor_health
African_american	0.017***
	(0.003)

American_indian	0.047***
	(0.011)
Asian	-0.002
	(0.003)
Hispanic	0.001
	(0.002)
Constant	0.031***
	(0.001)
Observations	48,722
R2	0.002
Adjusted R2	0.002
Residual Std. Error	0.180 (df = 48717)
F Statistic	19.965*** (df = 4; 48717)
Note:	*p<0.1; **p<0.05; ***p<0.01

Table 6 highlights two racial groups that continue to stand out in my research study to be most significant and persistent in high poverty rates, high 'some college' education rates, and unemployment rates. According to Model C, those who are American Indian, have 4.7% higher probability to have poor health compared to whites, ceteris paribus. Being African American had a 1.7% higher probability to have poor health compared to whites, ceteris paribus. Both African American and American Indians were significant in predicting poor health, unlike Hispanics and Asians. These results further suggest potential health care discrimination for African American and now American Indian. This questions the idea that only certain minority groups suffer the most in poverty rates, poor health, and unsurprisingly underlying factors like having higher education, insurance, and unemployment. It could be that overall African American and American Indian are being offered less jobs, offered lower pay, or treated unequally than those of the majority, whites. Such differences in treatment or pay may be a potential indicator as to

why these groups tend to have a higher poverty rate or higher poor health status, on average, compared to white, ceteris paribus. Furthermore, Luft (1975?) mentions African Americans had a harder time switching jobs when sick and were more likely to drop out of the labor force when sick than whites, but whites were also able to easily switch jobs.

V. Discussion and Conclusion

This study uses a pooled sample of individuals older than 26 years of age to explore the effect of individuals' self-reported race and ethnicity and health status, along with other socioeconomic variables on their poverty level. I find that African Americans and American Indians are most likely to live in poverty compared to other racial and ethnic groups. American Indians is the minority group most prone to be in poverty, even after controlling for socioeconomic factors. American Indians is also the most probable minority group to have poor health compared to the rest of the racial and ethnic groups.

Using a series of linear regression models, I find that having poor health is a significant predictor of poverty. Regardless of controlling for socioeconomic factors, those of poor health are overall more likely to be in poverty at any significance level. This result supports my original hypothesis that health will be a significant predictor of poverty. Additionally, African Americans who had poor health were 5.8% more likely to be in poverty at the 10% significance level. This interaction variable of a racial group and poor health was also the only statistically significant interaction variable. Descriptive statistics in Table 1 show American Indians to have the highest percentage of the population in the sample to be below the poverty level, with the African American group with the second highest percentage. Similarly, American Indians were also the group with the highest percent of individuals to have poor health, once again, African American

following behind in second most poor health. These results further support my hypothesis that minority groups would have more poor health, thus higher poverty.

Further research could explore using a wider variety of race and ethnicities. Instead of only utilizing poor health status, I could've utilized the rest of the categories of health and notice how each race and ethnicity predicted those categories and where certain groups tended to fall in their reported health status. I could've utilized more variables demonstrating other forms of health conditions that would be more prone in other races or ethnicities than others, like mental health, diseases, other health conditions and see how race affected the prediction of these conditions. Further research could be conducted in differences in health insurance access amongst racial and ethnic groups and how that predicts health conditions. Instead of predicting poverty level, this research study could predict income instead of poverty level and see if there are disparities in earnings as well and control for more socioeconomic and demographic variables that could potentially explain such differences. As far as Model C, I could have controlled for a variety of demographic variables to notice how coefficients changed in predicting poor health status once explanatory variables like age, education, etc. were considered.

VI. Policy Implications

Though Acts like the Affirmative Action Act and Equal Employment Opportunity already exist to put regulate discrimination in employment, there are still policies that can further close the gap in poverty and help the minority groups' disparities. Some of these policy implications, based on my study's results can start by completely removing any indication of race, or taking away the need of individuals to state their race or ethnicity when applying for a job. Since the Affirmative Action Act aims to ensure applicants are treated equally without

regard to color, race, sex, etc., it shouldn't be much to ask for it to be removed. As far as discrimination in the health car market, the same thing should apply when checking in at a hospital and filling out paperwork. If race and or ethnicity is ever asked for, medical professionals should be taught how to treat different races differently. Statistical discrimination covered this idea behind doctors treating individuals of distinct race but equal need differently. It may be true that an African American may need to be treated differently than a white individual, but health care workers should be informed, taught and knowledgeable how to treat properly, regardless of race, ethnicity, color, sex, etc. to improve health disparities that continue to exist. Policies could aim to improve health insurance coverage for more minority groups by implementing aid programs or clinics that offers free services to those who are in poverty or poor to again, improve the health of those minority groups that tend to be more likely to a) have poor health and b) be below the poverty line. With such additions and regulations, the United States can further close persistent health disparity gaps and poverty gaps amongst minority groups and majority groups.

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