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Does Money Buy Healthiness: An Examination of the Effects of Socioeconomic Indicators on Physical and Mental Health

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Abstract

The purpose of this thesis is to examine the impact of socioeconomic status indicators on physical and mental health. This study hypothesizes that higher socioeconomic status indicators are correlated with better physical and mental health while examining the extent of these relationships. In order to determine this, previous literature regarding health and socioeconomic status will be evaluated. The results of the General Social Survey (2016) will be used to test the effects of socioeconomic status on health using regression analysis. The responses of 1418 participants were used in this analysis, controlling for age, gender, race, political ideology, and religiosity. Two regressions will test each dependent variable. Regressions will include one model for each indicator of socioeconomic status and one model that tests the effect of all indicators together. When attempting to determine the effects of education, family income, and individual income on physical and mental health outcomes, a trend was discovered in which higher education and income have been linked to better physical and mental health.

Key Words: sociology, socioeconomic status, health, physical health, mental health, education, income

Introduction

Health in modern society has become more important than ever before. In today's realm of science and technology, we are understanding more and more how to deal with many issues that plague our planet, issues that were previously unknown. We know that smoking and tobacco use are dangerous and affect cardiovascular, respiratory and most other kinds of physical health (U.S. Department of Health and Human Services, 2018). We know that in order to avoid obesity, we need to balance our diets with the proper kinds of food, as well as supplement our diet with proper exercise (Centers for Disease Control and Prevention, 2018). We understand that some diseases previously thought to be incurable can actually be cured by simple medication or vaccination. Polio, tetanus, rubella, measles and many more formerly devastating diseases can now be prevented with vaccines, which technology allowed us to discover (Australian Government Department of Health, 2010). From workout videos on the internet, to blogs about healthy eating, to vitamins that boost our immune system and everything in between, our desire for and possession of scientific knowledge of physical health has never been more impressive.

Not only is our knowledge of physical health greater than ever before, but our knowledge about mental health has also increased by leaps and bounds. Mental health was not established as a field or discipline before 1946 when it was established as a more concrete concept of the previously outlined "mental hygiene" (Bertolote, 2008). Now there are entire college classes and even degrees dedicated specifically to studying and treating mental health. Additionally, we are not only familiar with the concept, but we are also becoming more familiar with the accompanying implications and stigmas around the topic. There have been studies happening for years in which social psychologists have developed and tested several models relevant to

understanding and changing stigma (Corrigan, 2006). In this way, similar to our understanding of physical health, our society understands mental health in a way it never has before.

Misconceptions About Health

So much of this information we have amassed related to physical health is readily available to people across the planet. Accompanying this knowledge is many people who report being healthy. Due to the available information on physical health, people tend to believe that they understand what is necessary to be healthy (Aubrey and Godoy, 2016). However, if this was true, the rate of obesity, heart attack, and diabetes would fall exponentially. National Public Radio has found in a recent survey that about 75% of Americans think they have a healthy diet (Aubrey and Godoy, 2016). However, the World Health Organization found that 39% of adults in 2016 reported being overweight (WHO, 2016). Many Americans tend to think that what they eat is healthy, but fail to account for portion size, and often eat far fewer fruits and vegetables than they should. Another problem is foods that people think are healthy but aren't. Foods and like cereal and granola bars are deceptively advertised as healthy, but oftentimes contain large amounts of fats and sugars (Aubrey and Godoy, 2016). This causes many people to believe that the food they consume is healthy when in reality, it may be contributing to the worsening health in our country.

Misconceptions of health also include people's tendency to overestimate the amount of exercise they engage in, largely due to beliefs about weight. A study by Janevic, McLaughlin, and Connell found that of all people surveyed, 54% did not meet physical activity guidelines. Of these, roughly one-quarter overestimated their physical activity (Javenic, McLaughlin, Connell, 2014). The odds of these respondents overestimating their physical activity was also found to be higher among those respondents who believed they were the "right weight" (Javenic,

McLaughlin, Connell, 2014). This can easily lead to people perpetuating poor health habits with the belief they are doing just fine. With misinformation and failure to accurately judge personal health like this circulating, it is quite easy to understand why obesity statistics remain higher than ever before.

In addition to physical health, this study will examine mental health and the impact socioeconomic status has on it. I focus on both aspects of health because mental health has often been overlooked in the past, and the examination of mental health is equally as important as physical health when looking at health holistically (World Health Organization, 2004). For this reason, to evaluate the impact of socioeconomic status on health, mental health will be looked at as well.

Accompanying the misconceptions we fall victim to concerning physical health, countless misconceptions exist about mental health. These include beliefs that people suffering from mental illness are childlike and need to be cared for, they are irresponsible, and they should be feared (Corrigan and Watson, 2002). In many ways, people with mental health issues are discriminated against in everyday life. Discrimination against those with mental health issues became so prevalent that the U.S. Equal Employment Opportunity Commission has laws in place to prevent discrimination on the grounds of mental health (EEOC, 2019). Often the stigma and discrimination that follow mental health are so bad that people neglect to report when they are suffering from or receiving treatment for mental illness (Hunt, Auriemma, and Cashaw, 2010). A study done in Australia in 2017 surveyed people over 45 and examined these participants' medical records and found that people suffering from depression and anxiety underreport drug usage by 36.5% (Bharadwaj, Pai, Suziedelyte, 2017). It is, for these reasons, I believe an examination of mental health is just as important as one of physical health.

While attempting to make this information more available to the public may help people to better their health, this knowledge will not be enough. People will still need the resources to pay for healthier foods, mental health resources, weight loss mechanisms and other avenues of healthcare. Even though misconceptions about health are common, there are still disparities in one's ability to avoid these pitfalls. For this reason, it is important to understand the relationship between socioeconomic status and physical and mental health beyond lack of knowledge. This study will further examine the relationship between the access to necessary resources for bettering health and how this affects the condition of health.

The Current Study

These misconceptions about health are not helped by the fact that we often do not understand non-physical influences on health either. Until we fully understand how both of these interact, we cannot truly begin to widely address the problem. This is the reason for this study. In this analysis. I seek to understand socioeconomic indicators, such as income and education, and how these indicators influence outcomes of physical and mental health.

In order to do this, this study will first examine the literature surrounding socioeconomic status indicators and health outcomes. There have been well established links between physical health outcomes (smoking, drug usage, heart disease, etc.) and socioeconomic status indicators such as income and job prestige. There are also links established between mental health outcomes (days of poor mental health, suicide, self-harm, etc.), and income and school funding.

After reviewing this literature, a series of linear regressions will be conducted to discover the degree to which the socioeconomic status indicators of education, family income and individual income impact physical health and mental health outcomes. The study will use self-rated condition of health and interviewer-rated condition of health to evaluate physical health

and use days of poor mental health in the last 30 and amount of time spent depressed in the last week to evaluate mental health. The regressions will be separated into four models to determine the individual impact of health, family income and individual income, and the impact the indicators have when considered together. An evaluation of these regressions will then be used to determine the validity of the hypothesis. In this way, the research for this study will be conducted.

Higher education and increased income both have direct and well-established connections to higher socioeconomic status. Additionally, these variables are easily measured and are generalizable across the population. These variables are operationalized in such a way that they can easily be applied to each dependent variable with little difficult. For these reasons, I will use education, family income and individual income as indicators to evaluate socioeconomic status. I hypothesize that the better one's education is, the better their mental health and physical health will be. In the same way, I hypothesize that the higher one's income is, the better one's physical health, and mental health will be.

Literature Review

Physical Health across Social Class

To begin, I will first look at the current research regarding socioeconomic indicators (income and education) and their effect on various indicators of physical health. A major factor of health, and one at the forefront of discussion in our country, is obesity. The Centers for Disease Control and Prevention administered a self-reported obesity survey found that out of the regions of the United States, the South led the nation in obesity reporting 32.4% of adults had obesity, followed closely by the Midwest at 32.3%. The Northeast reported 27.7% of adults had obesity, and the West had the lowest percentage, clocking in at 26.1% (Centers for Disease

Control and Prevention, 2017). After examining statistics found by the U.S. Census Bureau, the Northeast and the West also reported lower poverty rates than the South and the Midwest, which supports the hypothesis that income and wealth are positively correlated with better physical health (U.S. Census Bureau, 2017). However, obesity is not the only indicator of health that is influenced by socioeconomic status.

Communities that fall lower on the socioeconomic ladder are often plagued by higher levels of drug and alcohol abuse, psychiatric problems, and lower social mobility, all predictors of poor health (Sapolsky, 2018). In support of this conclusion, statistics found in the General Social Survey show that people who make less than $25,000 are about twice as likely to have injected drugs at one point than those people who make more than $25,000 (2016). The National Health Interview Survey also found that of those adults over 18 currently smoking, the number of smokers with a family income less than $35,000 was triple the number of smokers with a family income of $100,000 or more (Centers for Disease Control and Prevention, 2017). This kind of clear correlation shows that those people who are placed lower on the socioeconomic ladder find themselves more likely to partake in dangerous habits such as smoking cigarettes. In addition, due to lower social mobility, the members of these communities are at a much higher risk of making money in less savory ways, such as soliciting illegal drugs. The prevalence of these threats in lower-class neighborhoods creates a higher risk of citizens falling victim to health-endangering behaviors such as those listed above. Here again, it is clear that people who are higher up the socioeconomic ladder are less likely to fall victim to the problematic health risks that plague the lower class.

Education is a very important predictor of socioeconomic status. A study by Welle and Kittleson found that when college students took a course on health and wellness, their overall

health improved (1994). The course was designed to touch on six aspects of health: nutritional balancing, exercising, intellectual/emotional balancing, human/spiritual interacting, heredity/karma, and ecological balancing. The study also discovered that classes focusing on one aspect were not as effective as the class that covered all six aspects (Welle and Kittleson, 1994). In this respect, one could see that while furthering one's education does not guarantee a betterment in physical health, by learning more about how to be healthy, it becomes easier for one to be healthy.

A study by Pampel found that people lower on the socioeconomic ladder tend to hold occupations that are less likely to inform employees about harmful health habits (Pampel, 2010). He found that, on the contrary, these workers tend to be exposed to the kinds of advertising that promote drinking alcohol, poor eating habits and smoking cigarettes, all of which are detrimental to one's health. These people lack the education to understand just how dangerous these habits are. Oftentimes, these people are forced into these jobs as they do not meet the educational requirements needed for better employment opportunities. In this way, more education can lead to a job that supports healthier habits. Again, it is shown how increased socioeconomic status can have a positive effect on health.

Cardiovascular disease is another important indicator of physical health that varies across socioeconomic status. Heart disease is the number one cause of death in the United States (Centers for Disease Control and Prevention, 2016). It has already been widely established that smoking cigarettes are detrimental to cardiovascular health, and the fact that lower socioeconomic citizens are more likely to smoke already puts them at a higher risk of poor cardiovascular health than those citizens higher on the socioeconomic ladder (U.S. Department of Health and Human Services, 2018). A study done by The College of Family Physicians of

Canada found that there were five covariates associated with high blood pressure, including being overweight or obese, being male, being physically inactive, smoking, and having a household income of $29,000 or less (Lemstra, Rogers, and Moraros, 2015). Out of all these covariates, four of them are in some way associated with low socioeconomic status; being male is the exception. Most directly, we see that making less than $29,000 is a predictor of high blood pressure, which often leads to further cardiovascular issues (Lemstra, Rogers, and Moraros, 2015). This study further indicates that people lower on the socioeconomic ladder are at further risk of worsened physical health.

Another issue affecting one's health is access to health insurance. The amount of people currently without health insurance is rising. From 2016 to 2017 the number rose from 27.3 million to 28 million people without health insurance. These people are largely 19-64-year-old males with less than high school education and low income (Berchick, 2018). Given that the people that often need health insurance are those that cannot pay for it, it follows that those people who have insurance and can pay for it tend to need it less. Yet, another study by the Bureau of Labor Statistics found that as income rises, so does spending on healthcare. Homes in the lowest quintile of income spent roughly $1,800 yearly on healthcare, while in the highest quintile the total spent was roughly $7,200. However, the total expenditures from healthcare were 9.7% in the lowest quintile, and 6.9% of the highest quintile (Foster, 2016). This means that even though the wealthy are spending more, they see less of their budget being consumed by healthcare, while a larger percentage of low-class budgets goes to healthcare that is more financially restricted.

In this way, both maintaining a healthy lifestyle and getting access to healthcare might be harder for individuals with fewer financial resources. Because wealthier individuals are able to

spend more on healthcare while using less of their budget, they have easier access to products and services that can better one's health. People lower on the socioeconomic ladder spend a higher percent of their income on fewer services leaving them more vulnerable to detriments that wealthier people can afford. This is another example of how being higher in the socioeconomic ladder can provide someone with the opportunity for better health than those below them.

Mental Health across Social Class

Along with the societal implications behind physical health, an equally important examination is needed to assess the implications socioeconomic status carries with mental health. Mental health is a very complex and often very controversial topic in society today. Given the variety of things that impact one's mental health, it should come as no surprise that socioeconomic status should be one of these influences. A study conducted in 2018 determined that there was, in fact, a relationship between one's employment and treatment outcomes of therapy (Finnegan et al., 2018). Not only this, but another study from 2018 discerned that poverty had a bigger influence on mental health than income inequality did (Davlasheridze, Goetz, Han, 2018). This means that having lower income is more impactful to mental health than knowing others have higher income. Employment and income are both important indicators of socioeconomic status and given the implications these variables have on mental health, a look into the effects of socioeconomic status on mental health is warranted.

One important implication in socioeconomic status is education. Education has also been found to have a relationship with mental health. A study published about academic performance in adolescents found that some children may need mental health services and interventions to enhance their academic and emotional functioning (Roeser, Eccles, Freedman-Doan, 1999). Unfortunately, these kinds of services may not be available to low-income families. A cost

assessment study of mental health screening and treatment in New York City in 2004, without adjusting for inflation, found that screening can cost up to $149 to $234 per student, and treatment can cost $90 to $115 per session. In total, between $526,000 and $640,000 every 3 years for this program (Chatterji et al., 2004). This cost is massive. In low-income communities, $100 a session can often be too much for a family, leaving people lower on the socioeconomic ladder worse off as far as mental health. In addition, the Gerontological Society of America in 2005 found that when looking at education, there was a negative relationship with mental health between people who had more than 12 years of education and those with less than 12, meaning the more education, the fewer symptoms of depression (Miech, Eaton, Brennan, 2005). This shows an obvious correlation between socioeconomic indicators and mental health.

Another important indicator of socioeconomic status is income. Income has also been found to have a large impact not only on the prevalence of mental illness but also on the resources available to those afflicted. A study done in 2018 found that there was a clear association between the income rate of one's county and the number of days experiencing poor mental health. More specifically, it found that every additional day of poor mental health worked out to a "1.84 - 2.16 percentage point reduction in per capita income growth" (Davlasheridze, Goetz, Han, 2018). This shows that the more income growth in a county, the fewer days of poor mental health its citizens have. A possible cause for this may be the prevalence of mental health facilities and resources in these communities. The same study found that when looking at the wealth of these counties, the wealthier the county, the more mental health facilities per 10,000 citizens. Additionally, due to the nature of the lower-paying jobs in the lower-income counties, employers were less likely to offer mental health insurance to their employees (Davlasheridze,

Goetz, Han, 2018). In this case, there is a clear relationship displayed between income and mental health.

In short, socioeconomic status has been shown to affect mental health, often with quite serious consequences. A study of socioeconomic disparities and suicide attempts found that not only did the risk of self-inflicted injury and suicide attempts in youth increase with lowered SES, the rate of medically serious suicide attempts also increased with increased disadvantage (Burrows and Laflamme, 2009). As discussed earlier, multiple factors influence socioeconomic status, such as income and education. The same study looked at these influences specifically when it comes to attempted suicide. When examined more closely, it was found that frequency of attempted suicide was 2.8-7.7 times greater when the victim suffered from low educational attainment, 5.1 times greater for those with low income, and 1.5-2.3 times greater when the victim perceived their social class as lower when compared to advantaged peers (Burrows and Laflamme, 2009). While this study does look specifically at self-harm and suicide attempts, these are often the result of increased mental illness and provide insight into the relationship between socioeconomic status and mental health as a whole. An in-depth look at these indicators and their effects are clearly in support of my hypotheses that higher income and a higher level of education is linked with better mental health.

Methods

Sample

For this study, I used the General Social Survey from 2016. The General Social Survey is administered to roughly 5,000 Americans every two years by the National Opinion Research Centers, or NORC. The specific dates on which the information was gathered were unavailable, however, the information-gathering period was confirmed to have occurred during the year 2016.

Participants are selected randomly and are intended to be representative of a cross-section of the part of the country they live in (NORC, 2016). The NORC claims that participants are selected by their household, and each household is intended to represent roughly 50,000 similar households (2016). These selected participants, one adult from the selected household, are then interviewed by researchers in an attempt to gather data on hundreds of different trends. These interviews are approximately 90 minutes in length, to allow the researchers to get a comprehensive grasp of all the trends they would like to catalog (NORC, 2016). Among these trends are categories such as income, level of education, hours worked per week, the income of their family, demographic factors (sex, race, age, etc.) and most importantly, respondent's condition of physical health and mental health outcomes.

The General Social Survey for 2016 had a total of 2,867 respondents. After removing the missing data from the independent variables, the sample size for this research was reduced to 1,418 participants. The number of non-missing responses varied between dependent variables, making the valid sample size for each regression analysis different. The valid sample for "Number of Poor Mental Health Days in the Last 30" was 546 participants, while the sample for "How Much Time Depressed in the Last Week" was 486 participants. The number of participants for the physical health questions was higher with a sample size of 938 for "Respondent's Opinion of Own Health" and 712 for "Interviewer's Opinion of Respondent's Health." These were the sample sizes for the regressions in this study.

Measures

For the portion of my study examining physical health, I relied upon the following dependent variables. The first variable that will be examined is the respondent's self-reported condition of physical health. When looking at the first dependent variable of health, physical

health was measured by one question: "Would you say your own health, in general, is excellent, good, fair, or poor?" (M =2.86, SD =.83). In addition, I examined how the interviewer rated the physical health of the respondent. The measure for this variable is similar to the one for respondent health. The interviewer was asked, "Would you say the respondent's health, in general, is excellent, good, fair or poor?" (M=3.3, SD=.71). For both of these variables, higher values indicate better physical health as the response choices were coded as follows: 1=Poor, 2=Fair, 3=Good, and 4=Excellent. These are the main dependent variables I will be looking at for physical health.

When examining mental health, my study will use the following dependent variables. The first variable that will be examined is how many days of poor mental health the respondent has experienced in the last 30 days. This variable was measured by asking "How many days have you experienced poor mental health in the last 30 days?" (M=1.68, SD=.91). The results were measured by individual days, however I recoded this variable to simplify the options. This was measured in 0 days, 1 to 9 days, 10 to 19 days, and 20 to 30 days. Additionally, I examined how much time a week the respondent reported feeling depressed. This variable was measured by asking "How much time felt depressed in the past week?" (M=1.41, SD=.66). This variable was measured with the responses "none of almost none of the time, some of the time, most of the time, and all or almost all of the time".

As for my independent variables, I will use education, individual income and family income. To find our highest degree earned, the respondent was simply asked what their degree was with the following options: Less than High School, High School, Associate/Junior College, Bachelors, and Graduate. This was recoded into Less than Bachelors and Bachelors or More (M =1.3, SD =.46). Income and family income were both found the same way: a question asked

"what was your income before taxes" coded on an ordinal scale. The possible responses ranged from "Less than $1,000" to "$9,999" in 1,000-dollar increments. It then adds options "$10,000 to $14,999" to "More than $25,000" in 5,000-dollar increments (Family income M =10.93, SD =2.35, Income M =10.34, SD=2.93). The mean of both the respondent's income and total family income indicate that on average, the respondent's individual income and family income is between $15,000 and $19,999, as indicated by the value "10" in the mean. However, these means may be misleading. The family income variable indicates that while the average is between $15,000 and $19,999, 71% of family incomes are above $25,000. The variable for individual income has the same average, however 61.8% of respondents report an income of $25,000 or more.

My control variables will cover race, age, political views, and sex. The question for race asked "What is the first race R mentions? White, Black or African American, American Indian or Alaskan Native, Asian Indian, Chinese, Filipino, Japanese, Korean, Vietnamese, Other Asian, Native Hawaiian, Guamanian or Chamorro, Other Pacific Islander, Some Other Race, and Hispanic". I recoded this variable to only measure White (73.2%), Black or African American (17.1%), and other racial group (9.7%). I then created dummy variables for each race category for the regression. The question for age was a simple scale, with a response option of '18' to '89 or older' (M =49.16, SD =17.69). To find the respondent's political views, the interviewer asked: "Where do you place yourself on this scale?". The scale read: "extremely liberal, liberal, slightly liberal, moderate, slightly conservative, conservative, extremely conservative," with 1 =Extremely Liberal and 7 =Extremely Conservative (M =4.06, SD =1.49). This was then recoded to read "liberal, moderate, conservative," with 1 =Liberal and 3 =Conservative (M =2.05, SD =.79). Religiosity was also looked at, by asking "Does R consider self a religious person?" with a

scale reading “Very Religious, Moderate Religious, Slight Religious, and Not Religious”. This variable was also coded making 0 =Not Religious and 1 =Religious (M =0.75, SD =0.43). The variable of sex was determined by the interviewer looking at the respondent, similar to how the interviewer’s rating of health was determined. Sex was defined as 1 =Male, 2 =Female, and recoded to read 0 =Female, 1 =Male (M =0.55, SD =.497).

These variables were used because the variables regarding income and education provide a basis for examining the effects factors of socioeconomic status have on both kinds of health, while the other variables mentioned as independent variables provide controls to ensure that possible effects of age, race, sex, etc. are considered when making conclusions about possible correlational relationships. Table 1 shows the descriptive statistics for both the dependent and independent variables described above.

To better understand the relevance of this data, the demographics of the sample need to be recognized as well. The sample used in my regression was primarily middle-aged, with an average age of 44, although the age of participants ranged from ‘18’ to ‘89 or older’. This helps to ensure that the sample is representative. The race of the sample was found to be 73% white, while the sex of the sample was 52% female. Regarding political views, the largest group of people (a total of 36%) identified themselves as a moderate. Overall, this seems to be fairly representative of the United States as a whole. This is the basic demographic spread of the sample this study looked at.

Table 1 Univariate Statistics

	mean	*SE*	*min*	*max*	*valid n*
Dependent (Physical Health)					
Health (Self-Rated)	2.97	0.02	1	4	939
Health (Inteviewer-Rated)	2.97	0.02	1	4	713
Dependent (Mental Health)					
Days of Bad Mental Health in	1.63	0.04	1	4	547
Time Depressed in Last Week	1.37	0.03	1	4	487
Independent					
Less Than a BA	0.67	0.01	0	1	1418
Family Income	11.41	0.05	1	12	1418
Individual Income	10.41	0.08	1	12	1418
Controls					
Age	44.28	0.38	18	89	1418
Male	0.48	0.01	0	1	1418
White	0.73	0.01	0	1	1418
Black	0.18	0.01	0	1	1418
Other Race	0.09	0.01	0	1	1418
Religious	0.75	0.01	0	1	1418
Conservative	2.01	0.02	1	3	1418

Data Analysis Plan

To test the significance of the independent variables on the various dependent variables, I ran four regressions: one for each variable. Additionally, each regression included four models. The first model tests family income, the second tests individual income, the third tests education, and the final model tests how the three affect the variable when considered together. These models were tested using linear regressions. These regressions can be seen in Tables 2 through 5.

Results

Examining the first regression results (Table 2) addressing poor mental health days in the last 30, the control variables showed that being a woman and being less religious both result in more days of poor mental health in the last 30. When looking at each model, the first model examining family income found that lower family income results in more days of poor mental health. Additionally, the second model examining individual income found that lower-income

results in more days of poor mental health. The third model examining education found that having at least a bachelor's degree led to fewer days of poor mental health out of 30. The final model indicated that family income showed a stronger association than the individual income and education, with individual income no longer showing significance.

Table 2: Number of Poor Mental Health Days in the Last 30

	Model 1			Model 2			Model 3			Model 4		
	b	*se*	*Beta*	*b*	*se*	*Beta*	*b*	*se*	*Beta*	*b*	*se*	*Beta*
Intercept	2.65	0.13		2.31	0.10		1.94	0.08		2.58	0.13	
Independent Variables												
Family Income	-0.06	0.01	-0.27 ***							-0.05	0.01	-0.22 ***
Individual Income				-0.03	0.01	-0.21 ***				-0.01	0.01	-0.07
Less Than a BA[a]							0.12	0.04	0.15 ***	0.09	0.04	0.12 ***
Controls												
Male[b]	-0.12	0.03	-0.16 ***	-0.10	0.03	-0.14 ***	-0.13	0.03	-0.18 ***	-0.12	0.03	-0.16 ***
Black[c]	0.05	0.04	0.05	0.07	0.04	0.07	0.07	0.04	0.08	0.03	0.04	0.04
Other Race[c]	-0.01	0.06	-0.00	0.00	0.06	-0.00	0.03	0.06	0.03	0.00	0.06	0.00
Age	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.04
Religious	-0.10	0.04	-0.11 **	-0.09	0.04	-0.10 **	-0.10	0.04	-0.11 **	-0.11	0.04	-0.12 **
Conservative	-0.02	0.02	-0.04	-0.01	0.02	-0.03	-0.02	0.02	-0.04	-0.03	0.02	-0.05

notes: N= 546; * p<.05, **p<.01, ***p<.001

[a] reference group for 'Less Than a BA' is 'BA or More'

[b] reference group for 'Male' is 'Female'

[c] reference groups is 'White'

The second regression (Table 3) examined the amount of time the respondent felt depressed in the last week. The control variables for gender and political views were both significant with this dependent variable. Being a woman and being more liberal were both associated with more time spent depressed in the last week. The first model showed that when the respondent has a lower family income, they have more time spent depressed in the last week. The second model showed a similar trend with lower individual income associated with more time depressed in the last week. The third model finds that having a bachelor's degree or more is associated with less time spent depressed in the last week. The final model again showed that family income was the only significant variable, with individual income and education no longer

showing significance. Similar to the last regression, this regression shows that lower family income was associated with more time spent depressed in the last week.

Table 3: How Much Time has the Respondent Felt Depressed in the Last Week

	Model 1			Model 2			Model 3			Model 4		
	b	*se*	*Beta*	*b*	*se*	*Beta*	*b*	*se*	*Beta*	*b*	*se*	*Beta*
Intercept	3.12	0.30		2.52	0.2		2.10	0.16		3.14	0.31	
Independent Variables												
Family Income	-0.09	0.02	-0.17 ***							-0.07	0.03	-0.14 ***
Individual Income				-0.04	0.01	-0.14 ***				-0.02	0.02	-0.07
Less Than a BA[a]							0.02	0.08	0.01	-0.04	0.08	-0.02
Controls												
Male[b]	-0.17	0.07	-0.10 **	-0.15	0.07	-0.09 **	-0.18	0.07	-0.11 **	-0.15	0.07	-0.09 **
Black[c]	-0.13	0.10	-0.06	-0.06	0.10	-0.03	-0.02	0.10	-0.01	-0.13	0.11	-0.05
Other Race[c]	0.12	0.14	0.04	0.12	0.14	0.04	0.16	0.14	0.05	0.11	0.14	0.03
Age	-0.00	0.00	-0.04	-0.00	0.00	-0.04	-0.00	0.00	-0.05	-0.00	0.00	-0.04
Religious	-0.09	0.09	-0.05	-0.09	0.09	-0.05	-0.09	0.09	-0.05	-0.09	0.09	-0.04
Conservative	-0.12	0.05	-0.11 **	-0.11	0.05	-0.10 **	-0.11	0.05	-0.10 **	-0.12	0.05	-0.11 **

notes: N= 486; * p<.05, **p<.01, ***p<.001

[a] reference group for 'Less Than a BA' is 'BA or More'

[b] reference group for 'Male' is 'Female'

[c] reference groups is 'White'

The third regression (Table 4) examined the relationship between the independent and control variables with the respondent's self-rating of their physical health. When looking at the independent variables, the first model found that more family income led to a better self-report of health. Additionally, the second model found that higher individual income led to a better self-report of physical health. The third model found that having less than a bachelor's degree was found to be consistent with a worse self-report of physical health. When looking at all three variables combined, the fourth model showed that family income was no longer significant, with education being more significant than family or individual income.

Table 4: Respondent's Opinoin of Own Health

	Model 1			Model 2			Model 3			Model 4		
	b	*se*	*Beta*	*b*	*se*	*Beta*	*b*	*se*	*Beta*	*b*	*se*	*Beta*
Intercept	2.42	0.20		2.62	0.14		3.18	0.11		2.66	0.20	
Independent Variables												
Family Income	0.05	0.02	0.12 ***							0.02	0.02	0.05
Individual Income				0.04	0.01	0.14 ***				0.03	0.01	0.09 **
Less Than a BA[a]							-0.30	0.05	-0.19 ***	-0.27	0.05	-0.17 ***
Controls												
Male[b]	-0.04	0.05	-0.03	-0.06	0.05	-0.04	-0.03	0.05	-0.02	-0.05	0.05	-0.03
Black[c]	-0.05	0.07	-0.03	-0.05	0.07	-0.03	-0.04	0.07	-0.02	-0.02	0.07	-0.01
Other Race[c]	-0.12	0.09	-0.04	-0.11	0.09	-0.04	-0.16	0.09	-0.06	-0.12	0.09	-0.05
Age	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	-0.01
Religious	-0.07	0.06	-0.04	-0.07	0.06	-0.04	-0.05	0.06	-0.03	-0.03	0.06	-0.02
Conservative	0.01	0.03	0.01	0.01	0.03	0.01	0.02	0.03	0.02	0.02	0.03	0.02

notes: N= 938; * p<.05, **p<.01, ***p<.001

[a] reference group for 'Less Than a BA' is 'BA or More'

[b] reference group for 'Male' is 'Female'

[c] reference groups is 'White'

The fourth and final regression (Table 5) examined the interviewer's evaluation of the respondent's physical health. This rating of health was found to be significant with the variables controlling for age and religious affiliation. Understandably, the lower the age of the respondent, the higher the rating of the respondent's health. Interestingly, the less religious the respondent, the higher the interviewer rated the respondent's physical health. When looking at the independent variables specifically, the first model found that, similar to the third regression, higher family income is correlated with higher interviewer rated health. Similarly, the second model showed higher individual income was associated with higher interviewer rated health. The third model showed that having a bachelor's degree or more was related to a higher rating of physical health. Finally, when looking at the three variables together, the fourth model showed that education was more significant than individual income and family income, but education is more significant than family income only by a small margin.

Table 5: Interviewer's Opinoin of Respondent's Health

	Model 1			Model 2			Model 3			Model 4		
	b	*se*	*Beta*	*b*	*se*	*Beta*	*b*	*se*	*Beta*	*b*	*se*	*Beta*
Intercept	3.22	0.19		3.75	0.14		4.09	0.11		3.46	0.19	
Independent Variables												
Family Income	0.06	0.01	0.17 ***							0.06	0.02	0.16 ***
Individual Income				0.02	0.01	0.08 *				-0.01	0.01	-0.03
Less Than a BA[a]							-0.25	0.05	-0.18 ***	-0.22	0.05	-0.17 ***
Controls												
Male[b]	-0.02	0.05	-0.02	-0.03	0.05	-0.02	-0.01	0.05	-0.00	-0.01	0.05	-0.01
Black[c]	0.02	0.06	0.02	0.02	0.06	0.01	0.03	0.06	0.02	0.03	0.06	0.02
Other Race[c]	0.05	0.08	0.02	0.05	0.08	0.02	0.04	0.08	0.02	0.05	0.08	0.02
Age	-0.01	0.00	-0.27 ***	-0.01	0.00	-0.21 ***	-0.01	0.00	-0.22 ***	-0.01	0.00	-0.24 ***
Religious	-0.13	0.06	-0.09 *	-0.15	0.06	-0.10 *	-0.12	0.06	-0.08 *	-0.11	0.06	-0.07
Conservative	0.03	0.03	0.04	0.03	0.03	0.04	0.04	0.03	0.05	0.04	0.03	0.05

notes: N= 712; * p<.05, **p<.01, ***p<.001

[a] reference group for 'Less Than a BA' is 'BA or More'

[b] reference group for 'Male' is 'Female'

[c] reference groups is 'White'

Discussion

After examining the results of the regression data, it seems as though the hypotheses regarding the relationship between health and socioeconomic status indicators is supported. The regressions showed that increased income and the presence of at least a bachelor's degree resulted in better mental health and better ratings of physical health. This result was consistent across all four regressions.

One interesting finding from these regressions was that, when measured alone, individual income was significant in both regressions measuring mental health. However, when measured with education and family income, family income became more significant with individual income becoming nonsignificant. This suggests that when evaluating mental health outcomes, family income becomes more important than individual income. When looking at how the respondents evaluate their own physical health, family income was significant by itself, however when measured with education and individual income, family income became nonsignificant,

while individual income remained significant. This suggests that when evaluating mental health, family income is more important, but individual income is more important when evaluating physical health.

Additionally, being a woman was found to be associated with worse mental help in both regressions looking at mental health. This could potentially be linked to masculine culture telling men and boys to suppress their emotions, leading to underreporting and reluctance to admit such feelings (Oliffe et al, 2010). Being religious led to better "mental health days," in the regression for "Number of Poor Mental Health Days in the Last 30" while being liberal led to more time being "depressed" in the regression for "How Much Time the Respondent has Felt Depressed in the Last Week". This could mean that being religious provides a better support system or coping mechanism that can help respondents have fewer days of bad mental health. This leaves the potential that being religious can be linked to better mental health and being more liberal can be linked to more time spent depressed. As far as the socioeconomic indicators, the regressions were found to be consistent with previous research regarding the relationship between mental health and socioeconomic status.

The results for physical health were also found to be consistent with each other. There were no variables other than the socioeconomic indicators that were found to be significant with the individual's self-report of their physical health. When looking at interviewer rated health, the only variables found to be significant with the interviewer's report of health, age was understandably a factor. There has been a long-standing assumption that younger people tend to be healthier than their older counterparts. The relationship between interviewer rated health and religiosity is an interesting one as being more religious led to a worse health rating from the interviewer. This is a relationship that could potentially offer a deeper analysis of perceptions

regarding physical health and religiosity. However, across both regressions regarding physical health, having more income and a higher degree leads to a better rating of health. In this way, the results from the physical health regressions line up with the research regarding the relationship between physical health and socioeconomic status indicators.

Limitations

There are a few limitations to this study. When looking at physical health, it was established earlier that people tend to misevaluate their health. To be more accurate, future studies should have physical health evaluated by health professionals. The same holds for the interviewer's rating of physical health. There are limitations to mental health as well. Mental health is still stigmatized, and no matter how anonymous, people may still be inclined to misreport their mental health status. Additionally, like physical health, mental health professionals may be able to more accurately report the mental health of the respondents.

Another limitation of this study is that the relationship between socioeconomic indicators and poor physical health habits such as smoking, drinking alcohol and drug use is not directly evaluated. The previous literature identified these as having relationships with the socioeconomic indicators but were not directly tested.

As far as sample size, this study could be improved by reaching a larger sample. While the GSS generally does reach a large and representative group of people, this study was restricted by the number of people who responded to the questions dealing with physical and mental health. The more restrictive category here is mental health. With the current stigma around mental health, many people do not feel comfortable disclosing their mental health. By trying to reach a larger audience and making the survey more anonymous (whether that be through online or mail surveys, or through extra measures to ensure anonymity) researchers may be able to

reach more people and therefore create a more representative study. These are a few limitations and possible improvements for this study.

Conclusion

After looking at these regressions I believe that my hypothesis is supported. The previous literature indicates a relationship between socioeconomic indicators and better physical and mental health. I believe that there is a long-standing relationship between socioeconomic indicators and health, and the research shows that the better one is socioeconomically, they tend to have better health. The information provided by the General Social Survey supported this information through multiple regression analyses which showed socioeconomic indicators to be significant to physical and mental health variables. For these reasons, I conclude that the hypothesis is supported in saying that higher socioeconomic status is correlated with better physical and mental health.

These results create implications about health in the United States. As mentioned above, people of higher social status have more spending power when relating to health. This is also reflected in public opinion. Lower class respondents are more likely to claim the government is not doing enough to protect health. There are a few possible reasons for this. A study conducted by Himmelstein and Woolhandler determined that while spending on public health increased greatly from 1960 to 2001, in more recent years, we see the number of government funds allocated to public health dropping. In 2016, per-capita public health expenditures have fallen 9.3% since 2008, and public health's total share of expenditures has declined by 17% since 2002 (Himmelstein and Woolhandler, 2016). This leads one to believe that even though we know more about health than ever before, the amount of funding for public health is dropping. More spending on public health can show people that bettering one's health is a desirable result.

Additionally, more public health funding can decrease the health disadvantages that people of lower social classes experience. The findings of this study indicate that more public health spending can be beneficial.

These findings indicate a clear relationship between socioeconomic status and physical and mental health outcomes. Further studies and a deeper understanding of this relationship could lead to increased awareness and knowledge, and a healthier society for all. While it seems as though money can indeed buy healthiness (to an extent), it does not need to always be that way.

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