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How Do Household Income and Education Level Affect People's Mental Health Conditions?

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Abstract

Many people during the pandemic reported for mental health issues, which became a societal issue when the number went up. This article mainly focuses on the relationships among people's mental health, education level, age, gender, race, and household income during the pandemic from 2020 to 2021. The earlier researchers had findings before the pandemic, but we do not know whether the findings are suitable for the circumstances in the pandemic. This research is advocating for solving this issue. This article's mediation model utilizes household income and education level as mediators for analyzing the data. Based on the data, the final results show that higher household income people, elderly people, white males, and people with higher education levels tend to have fewer mental health issues than others. The findings imply that inequalities among people indeed influence people's emotions differently and can help the practitioners in the field balance the resources better.

Keywords: pandemic, mental health, education level

1. Introduction

Since 2019 December, at least 400 million people have been infected by COVID-19; this coronavirus has a strong negative influence on the development of the economy, population, and many aspects. Many countries are putting efforts toward saving people's lives and developing vaccinations to combat this sudden pandemic. However, compared to physical health, many people's mental health conditions are ignored by society and the data shows that more people are reporting their symptoms of being anxious and depressed. Based on different levels of education, many people are confronting many COVID-19 conspiracy theories which would enhance people's depression and anxiety to varying degrees, because people would always have a stronger ability to recognize the truth and fallacies with a higher education level. Meanwhile, not only the importance of education level would be mentioned, but also the relationships and influences among age, race, gender, education, and annual household income. In common, people consider that people would be less depressed and

anxious than others if they have higher levels of household income, but the influence of consumerism should be considered as well, as people with a higher level of income might also have more debts because they are confident with their income level without the impact of the pandemic. Regarding the issues of age, people would decrease their outdoor activities with age increasing, so quarantine might not be a big problem for elderlies rather than for young people who have a much stronger desire of involved in social activities.

This article would focus on the impacts of household income, age, gender, racial gap, and education level on people's depression and anxiety during the COVID-19 pandemic. I think focusing on mental health is important because people are more likely to learn about the number of infected people through media coverage, but not too many people would notice the conditions of mental health because depressed and anxious people are less likely to talk about the situations to other people.

Current studies have already researched the effect of education level and household income before the pandemic, and I would further this study with the add-on of age factor as well as the findings during COVID-19. For example, current studies conducted in Turkey suggest high levels of depression and anxiety during COVID-19 and they also consider that mental health conditions would influence people's distress on physical health. Anxiety is defined as "the natural waring system of the body representing the likelihood of a potential danger and action used to address it" (Yıldırım & Akgul, 2021) At the same time, the changes in education also have its potential influence because Mukhtar and Javed consider that online courses could provide more comfort and higher accessibility but it also has limitations involved inefficiency and difficulty in maintaining academic integrity (Mukhtar & Javed, 2020). In this article, I would hypothesize that people who have high household incomes with high education levels would be less anxious or depressed than people who have low household incomes with low education levels. When discussing the effects of age, I suppose age increasing would magnify the effects of education level, as people with higher education and high ages would be less likely depressed and elderlies with low education levels might be concerned more about conspiracies, which lead to depression and anxiety. To testify my hypotheses, I would not do interviews or distribute questionnaires during this pandemic but by collecting the datasets online with current data from USC, I would mainly use quantitative methods with analyzing the data I collected. At the same time, I would compare my conclusion of being depressed and anxious during the pandemic and the earlier conclusions in this field to see whether or not it shows a difference, which would help sociology researchers and medical professionals cogitate on the deep reasons for mental disorders and the valuable experience.

2. Literature Review

Since COVID-19 was first identified in Wuhan, China in 2019, and spread globally in 2020, many people are paying attention to it almost every day, such as the process of vaccination and suggestions of organizations. Meanwhile, some invisible social issues erupted with the spreading of the coronavirus, and researchers also find some social issues never seen before. Many people are feeling anxious and depressed during the pandemic even not in quarantine. A bunch of factors would lead to these social issues but in this article, household income and education would be mediators and race, gender and age would be independent variables. The reason why I am only focusing on them in this article is education level and household income are two important standards to indicate a person's living status and the opportunities to make contact with people in different classes. Social class always could influence a person's decision-making process and considerations on the same affair, of course, in most cases. Meanwhile, education levels and household income are highly related to each other, Tinbergen concludes that "there is a considerable influence of the level and the inequality of education on income distribution is found…" (Tinbergen, 1972), and I do believe this kind of high correlation could help future researchers who are interested in this field access the orientations and resources much easier, as well as doing comparisons. America is now in an era of aging and elderlies are under the spotlight in medical areas and many other welfare system policy-making processes, which uplifts the

urgency and seriousness of doing research on this group.

The data (Figure 2) shows that most people are experiencing a decrease in household income, and many of them claim that their debt problems are in a crisis. In most situations, we would assume that people with higher household incomes would be less depressed and anxious than lower people. In the accordance with Zimmerman and Kanton's article called *Socioeconomic status, depression disparities, and financial strain: what lies behind the income-depression relationship?* They conclude that "as a marker for a variety of economic outcomes, income is valuable as a strong correlate of depression outcomes (under the circumstance of controlling variables such as employment status and financial strain)" (Zimmerman & Kanton, 2005), but I am unable to know the exact information about respondents' employment status and financial strain, so I would assume that other variables are not changing during the distribution of the questionnaires. In 2020 the stock market wobbled and even dive, causing 4 times of trading curbs in only 10 days, potential breaks in funding chains for high household income because some of them are earning high income by loaning from banks and the diving of stock market would have a ripple effect on the system of debt (Figure 1).

Some of them might face the situation of from 100 to 0, which would be a much bigger pressure than people who have much less household income. As well to the education level, people are surfing websites, social media, and communicating with other people every day, so they can always get some new information whether the info is right or not, and some theories of conspiracy could always increase people's depression, in accordance with Daniel Romer's conclusion that conservative political ideology people and disadvantaged racial-ethnic groups are more likely to believe in conspiracy theories and, meanwhile, most of them believe that MMR vaccination would be harmful to bodies. (Romer, 2020) In this article, I would try to figure out the relationships and the influence of these variables during the pandemic.

In this pandemic, many psychologists and sociologists find out that many people have mental health issues and Wolde (2020) believes that mental health problems are highly related to the social (social isolation, stigma), psychological (including getting infected, isolation, information triggered stress) and economic issues (decrease of household income, pay loss, and the risks of being unemployed), and we also need to consider the circumstances of pre-existing factors which might affect people's mental health. Meanwhile, he also points out that women are more likely to have mental health problems than counterpart men during this pandemic. In the same, a survey by CDC, in late June of 2020, indicates that 31% of respondents reported symptoms of anxiety or depression, and even 11% of respondents had seriously considered suicide in the past 30 days, which implies that mental health problem is a widespread phenomenon. Ettman and Abdalla in *Prevalence of Depression Symptoms in US Adults Before and During the COVID-19 Pandemic* illustrate that the "prevalence of depression symptoms were more than 3-fold higher during COVID-19 compared with the most recent population-based estimates of mental health in the US", and their data echoes Rudenstine and McNeal's data in *Depression and Anxiety During the COVID-19 Pandemic in an Urban, Low-Income Public University Sample*, that women are more likely to be depressed during COVID-19 and people who never married are feeling less depression than other people do.

In common, mental illnesses are defined as health conditions involving changes in emotion, thinking, or behaviors. However, mental illness would be a broad topic to discuss so this article would only focus on anxiety disorders and depression. From American Psychiatric Association, anxiety disorder is defined as "differ from normal feelings of nervousness or anxiousness and involve excessive fear or anxiety" and depression is considered as "a common and serious medical illness that negatively affects how you feel, the way you think and how you act." (American Psychiatric Association, 2013)

In the earlier studies about mental health, sociologists and psychologists paid a lot of attention to youth and they found that youth's growing environment and their races both play important roles in their establishment of mental health (Rojas, 2015), and the author considers that they would have mental health problems if they witnessed violence and dangerous situations

when they are kids; meanwhile, the identities of minority group always have less household income, leading them to be less educated. He reveals the data on the number of arrested juveniles that most of them are in minority groups, such as African Americans and Latino. In the article discussing the relationship between wealth level and mental health illnesses *What Is the Association between Wealth and Mental Health* (Cartrer & Blakely, 2009), the authors, in the end, emphasize the strong association between wealth and mental health, they interviewed 15340 respondents about their income status, physical health, and mental health levels, and they discover that "The association of quintiles of wealth with mental health was stronger than for quintiles of household income in all models", which help authors illustrate the point that wealth is much more essential and important to people's mental health rather than household income.

Levy and Cohen-Louck demonstrate that economic implications have a bigger influence than the virus do, and they find a paradox that elder people are more likely to be physically harmed by coronavirus but most of them show less depression and anxiety than young people do (2021), which indicates that both age and economy situation are having an effect on people's psychological status and decision making. Although elder people are much more sensitive and susceptible than young people about COVID-19 virus, they definitely have fewer negative effects on mental health because they tend to stay at home before COVID-19 and young people have to face more uncertainty about locking down and employment issues, which would be related to old people's welfare and insurance that most of them could get the pension. As a result, it actually could reflect some relationships within household income and age that both of them have an influence on people's mental health during COVID-19.

In America, over 40% of people hold a bachelor's degree or higher, and they contribute to the development of the country and the economy a lot. They are also the most active people on social media, and the data shows that 79% of them have social media accounts (Statista, 2019), higher than high school graduates and some college people. Whereby these people could get more information from the internet, especially during the COVID-19 pandemic, that people "eased the transition to social distancing by spending more time online" (Nabity-Grover & Cheung, 2020), and their data also shows that social media have an over 60% increase after the pandemic and people were having the aid of social media to stay connected with each other. There are also some researchers interested in the relationships between education level and income level to mental health, Araya and Lewis approached 4300 private households and they found that education plays a cardinal role in mental health, and they conclude that "strong, inverse, and independent association between education and common mental disorders" (Araya & Lewis, 2003), and the data also shows that income actually does not have same importance on mental health than education does. However, the authors also indicate that similar research in developed countries has totally opposite results, which might be considered as the gap between developing countries and developed countries. Meanwhile, we cannot ignore the relationships between education level and income level, that a higher education level, in most cases, always leads to a higher income level, and people who have higher education level usually have less anxiety about their income decrease or employment than unskilled manual workers do. However, referring to *Beliefs and perception about mental health issues: a meta-synthesis*, authors summarize that many factors would lead to mental health problems and the causes would vary within different groups of people, such as students, African Americans, Asians, employees, etc. For example, many refugees admit that lack of mental health knowledge, fear, and perceptions of 'talking does not help' all could be seen as a reason why they have mental health issues. The most interesting thing in their summary is only nomads of Pakistan, pregnant/ancestral women and refugee women would describe economic issues and family-related difficulties as causes of mental health problems, rather than other groups' lack of knowledge or scarce medical resources.

3. Research Methods

For solving the relationships among household income, age, gender, race, and education level affecting people's mental health (depression and anxiety) during COVID-19 and each of their roles

in the research, I plan to use quantitative study methods and comparing the results of earlier studies and my final results for making a conclusion. For quantitative methods, many current studies on COVID-19 could give me excellent reference and results to compare with; meanwhile, I am using the recorded data from USC Dornsife because they have adequate and complete data on education level, household income, gender, race, and age, even the marriage status, survey start and end dates. The quantitative methods could help me establish a strong relationship among these variables. At the same time, this pandemic is not over until this article starts, so collecting data online would help keep social distancing and unnecessary contact with people.

4. Data Analysis

All data would be analyzed using Stata 17 SE, and the data would be from Understanding America Study Data. Descriptive statistical data and analysis would be utilized to illustrate respondents' characteristics aligned by household income, education level, age, race, gender, and mental health conditions. For measuring respondents' mental health, the survey implemented Mental Health (PHQ-4) questionnaire. In earlier studies about mental disorders and depression, Khubchandani and colleagues consider that this questionnaire has "high reliability, validity, and efficiency" (Khubchandani & Brey, 2016), and Kroenke and his colleagues also approve the validity of PHQ4 questionnaire, concluding that "The PHQ–4 is a valid ultra-brief tool for detecting both anxiety and depressive disorders." (Kroenke & Spitzer, 2007).

I would narrow the population to nationwide in America and the collected data is all about the national sample rather than LA counties and California residents. The USC Center announces that they would use the data from panel members and these people would report the result on a "pre-assigned day of the week every other week and each data point represented a half sample of responses from the previous seven days. Since March 17, panel members respond monthly, and each data point stands for a quarter of the sample. The figures are updated just after 3 am PDT every day of the week." So, in fact, I do not need to consider neither the access issues nor ethical issues except for the regulations and signed agreement. In this research, there are so many factors that could be potential reasons to affect the final results, but we cannot measure every factor in only one research. Therefore, I would set age, gender and race as independent variables, household income and education level as mediators, and the data would be selected as about one-year-long sample. For the age, I would only focus on people who are 18-75 years old, and I assume people over 75 years old have retired and mature in mind, as well as not having good health conditions. Most of the respondents are white Americans, African Americans, American Indians and Asian Americans, so I would only measure four races in this article.

The dependent variables would be people's mental health situations. When mentions mental health issues, most people would think about anxiety and depression, however, mental health issues contain more than that, and in this article, I would add up nine mental health related variables together into a continuous variable, so that it could be easier to measure and self-record. Meanwhile, I also control the influence of marital status, working time into the discussion to supply the audience with a more comprehensive view of the issues.

In Stata, I first recode all mental health variables, and I add them up to a new continuous variable from 11 to 18. 11 means that the respondents have 7 symptoms and 18 means that they have no symptoms. Ideally, everyone should reply with a yes or no, but some respondents show uncertainty about their psychological status by replaying 'unsure' (all 'unsure' answers are dropped), and it reflects that the popularization of mental health knowledge still has a long way to go. Then I dropped all the working hours per week if they exceed 112 hours a week, and it is considered as wrong value because some respondents respond, "they are working 168 hours a week". Next, I convert household income which is a categorical variable to a continuous variable by using the midpoint, from "less than $5000, 5000 to 7499, 7500 to 9999, 10000 to 12499, 12500 to 14999, 15000 to 19999, 20000 to 24999, 25000 to 29999, 30000 to 34999, 35000 to 39999, 40000 to 49999, 50000 to 59999, 60000 to 74999, 75000 to 99999, 100000 to

149999, 150000 or more" to "2500, 6250, 8750, 11250, 13750, 17500, 22500, 27500, 32500, 37500, 45000, 55000, 67500, 87500, 125000 and 175000", and I also use log household income to represent the relationship in model, because I found that the coefficient of household income would be zero if I use the original data. Marital status is measured through six categories: married (spouse lives with me), married (spouse lives elsewhere), separated, divorced, widow and never married. Education originally has 16 categories and it would be troublesome in the future, so I generate a new variable called education continuous (educcon), and education level from zero to nine years, ten to twelve years (with diploma), some college and associate degree, bachelor's degree, professional studies and master, PhDs are considered as "less than high school (LT high)", "high school", "some college", "bachelor", "master" and "PhD".

In the tables 1 to 4, I ran regression diagnostics, and they showed no abnormality, so I can continue on my mediation models. However, the dataset is panel data, so in table 4 we can see that it has 4614 respondents in the data rather than about 100,000. After adding the given final weight, we can see that coefficients change a little compared to earlier and the p values of education and American Indians are larger than 0.05, so we can conclude that these two are not significant. In table 6, table 7 and table 8 are mediation models measuring the effects of education and household income as mediators, and the independent variables are race, age, and gender. Almost all the p values are smaller than 0.05, including household income and education in the age model, with a p-value smaller than 0.05, so they are still significant in that model. After adding the weight variable in table 5, we can see the standard error and coefficients changed a little bit. All minority racial groups show less sensibility to mental health than white people, and Asians have the highest rate in this model. Male shows a higher coefficient than female and age, education, working hours, as well as household income; all contribute to the increase in mental health score, so in this model we can say that people are less likely to have a mental health issue if they are male, having a higher education level, higher age, longer working hours. However, marital status plays a totally reversed role in his model. The data shows that people who are having LDR (long-distance relationship) marriage, living separated, divorced, widowed, and even never married people all have a higher possibility to have mental health issues than married, cohabiting people.

Before analyzing mediation models, I first test the correlation matrix of residuals, all of them show that p-values are smaller than 0.05, so we can conclude that we have correlations across equations. In table 6, we can see that only Asians have comparatively higher education and household income than white people, and the data also shows that they tend to have a higher score on mental health conditions, which means that Asian are the least likely group to have mental health issues than other races. The variable education has a negative effect in this race model, and people's mental health conditions would be deteriorated by decreasing 0.012 with each education level increases. However, household income's coefficient is positive here, which means that household income would affect people's mental health positively. Table 7, this table is analyzing the mediation model between education, household income, and age. The table shows that age has a slightly negative effect on education level, but it is not very objective, because we need to consider the respondents' living environment and his/her living social context. Meanwhile, people always have fewer and fewer opportunities to study as age increases, so it is plausible that age hurts respondents' education levels. Age also has a remarkable effect on respondents' household income, it is intelligible that people are easier to get promotions with more skills and experience. Education also has a negative effect on respondents' mental health conditions. However, its p-value is larger than 0.05, so we would not discuss it more. At the same time, household income does affect respondents' mental health conditions positively in this model either. The data indicate that people are having higher mental health condition scores with each additional age increasing. This echoes the literature review above because older people have fewer opportunities to access outdoor activities and quarantine would not influence them too much. In the last part, table 8 represents the model of education, household income, and gender. This model suggests that

males are more likely to access higher education levels and higher household income, and this gender gap leads to the difference in their mental health scores. Male has 0.241 more points on the mental health condition score than female does, and it indicates that men always have a better mental health condition than women do.

5. Limitations and Future Research Orientations

This research paper has several limitations. First of all, it is a quantitative study, and it could be better if the researcher interviewed some of the respondents to ask about their recent mental health conditions rather than simply differing them into yes and no. The reason why is some respondents are limited by their experience and education level, they might be unable to understand what "anxiety" and "disorders" are. Moreover, the household income and education are categorical variables originally, but they still cannot show enough details after recoding by using the midpoint. Finally, earlier researches show that social media using time also influences people's decision-making process and comprehension of a new social phenomenon or event, as well as the pandemic. It would be better if future researchers could include this variable in the dataset. Future researchers should include earlier pandemic datasets and historical-comparative studies to discuss the changes in people's mental health conditions and the development of the mental health realm.

6. Conclusion

This quantitative study elucidates that household income affects respondents' mental health conditions positively, but education negatively affects respondents' mental health conditions. The reason might be higher education levels people have more communications with people and more methods to access the latest information, which leads to their increased anxiety and nervousness when they confront the pandemic. The higher the household income the respondent has, the calmer the respondent is, so their mental conditions would not be affected excessively. Meanwhile, the data also shows the gender gap, race gap, and the effect of age during this pandemic. Older people have a smaller possibility to have mental health issues although most of them have a relatively lower education level than young people. When other variables are controlled, males usually have better mental health conditions. As a consequence, the null hypotheses of this article are all rejected because of the negative effect of education and the positive effect of household income, and the household income and education level both mediate the model.

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Appendix A

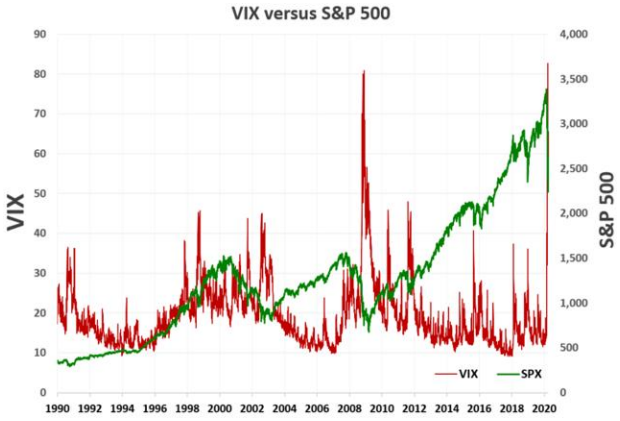

Figure 1.

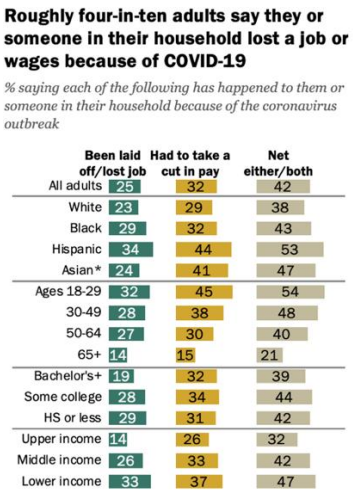

Figure 2.

Figure 1, the red line indicates VIX (Cboe Volatility Index represents the market's expectations for the relative strength of near-term price changes of the S&P 500 index), and we can see that the index was almost at the same high level as it was in the 2008 financial crisis. (Seeking Alpha, 2020)

Figure 2 shows that most of the interviewees, all American adults, are facing pay cuts or have even been laid off because of Covid-19. The data shows that pandemic has a larger influence on people who have lower education levels and income levels. (Parker and Minkin, 2020)

Table 1. The regression model of mental health

Mental health condition	Coefficient	Standard value	P value	95% confidence interval	
Race					
2 Black Only	0.269	0.012	0.000	0.243	0.289
3 American Indian or Alaska	0.286	0.022	0.000	0.242	0.327
4 Asian Only	0.329	0.013	0.000	0.298	0.347
gender					
1 Male	0.186	0.007	0.000	0.172	0.198
education	-0.012	0.002	0.000	-0.007	0.000
age	0.011	0.000	0.000	0.010	0.011
Working hours	0.004	0.000	0.000	0.003	0.004
Household income	0.059	0.000	0.000	0.000	0.000
Marital status					
2 Married (spouse lives)	-0.035	0.032	0.271	-0.099	0.025
3 Separated	-0.194	0.028	0.000	-0.258	-0.150

4 Divorced	-0.253	0.010	0.000	-0.271	-0.233
5 Widowed	-0.234	0.021	0.000	-0.277	-0.195
6 Never married	-0.105	0.009	0.000	-0.125	-0.092
date	-0.002	0.001	0.001	-0.004	-0.001
_cons	16.260	0.026	0.000	16.788	16.888

95% confidence level*

Table 2. The vif of all variables

Variable	VIF	1/VIF
Race		
Black	1.080	0.928
American Indians or Alaska	1.030	0.973
Asian	1.050	0.953
Male	1.100	0.904
education	1.230	0.801
age	1.290	0.778
Working hours	1.120	0.905
Household income	1.450	0.692
Marital status		
Married (spouse lives elsewhere)	1.020	0.977
Separated	1.030	0.975
Divorced	1.160	0.857
Widowed	1.070	0.931
Never married	1.370	0.732
date	1.000	0.999

Table 3. Shapiro–Wilk W test for normal data

Variable	Observations	W	V	Z	P value
Standard error	76,431	0.76585	5917.889	24.25	0.000

Table 4. The independence test with respondents' id

Mental health condition	Coefficient	Standard error	P value	95% confidence interval	
Race					
2 Black Only	0.266	0.051	0.000	0.167	0.366
3 American Indian or Alaska	0.284	0.085	0.001	0.117	0.451
4 Asian Only	0.322	0.046	0.000	0.231	0.413
Gender					
1 Male	0.186	0.029	0.000	0.128	0.242
Education	-0.012	0.007	0.400	-0.018	0.011
Age	0.010	0.001	0.000	0.008	0.013
Working hours	0.004	0.001	0.003	0.001	0.006
Household income	0.059	0.000	0.007	0.000	0.000
Marital status					
2 Married (spouse lives)	-0.035	0.120	0.771	-0.272	0.198
3 Separated	-0.194	0.137	0.157	-0.472	0.064
4 Divorced	-0.253	0.051	0.000	-0.352	-0.152
5 Widowed	-0.234	0.110	0.032	-0.452	-0.021
6 Never married	-0.105	0.041	0.008	-0.189	-0.028

date	-0.002	0.001	0.007	-0.004	-0.001
_cons	16.260	0.119	0.000	16.605	17.070

Adjusted for 4614 clusters in the respondents' id number* 95% confidence level*

Table 5. The weight model with given final weight

Mental health condition	Coefficient	Standard Error	P value	95% confidence interval	
race					
2 Black Only	0.335	0.013	0.000	0.300	0.353
3 American Indian or Alaska	0.017	0.040	0.670	-0.065	0.090
4 Asian Only	0.351	0.011	0.000	0.323	0.366
gender					
1 Male	0.195	0.010	0.000	0.177	0.217
Education	-0.0004	0.002	0.909	-0.002	0.007
age	0.012	0.000	0.000	0.011	0.012
Working hours	0.005	0.000	0.000	0.004	0.006
Household income	0.087	0.000	0.000	0.000	0.000
Marital status					
2 Married (spouse lives)	-0.117	0.037	0.000	-0.203	-0.059
3 Separated	-0.105	0.034	0.000	-0.197	-0.066
4 Divorced	-0.303	0.019	0.000	-0.344	-0.270
5 Widowed	-0.188	0.027	0.000	-0.255	-0.149
6 Never married	-0.131	0.013	0.000	-0.167	-0.116
_cons	15.798	0.040	0.000	16.535	16.693

95% confidence level*

Table 6. The mediation model of education, household income and race

		Coefficient	Standard error	P value	[95% conf. interval]	
Education						
	Race					
	2 Black Only	-0.511	0.027	0	-0.564	-0.457
	3 American Indian and Alaska	-1.160	0.052	0	-1.262	-1.058
	4 Asian Only	1.191	0.030	0	1.133	1.249
	_cons	11.797	0.008	0	11.780	11.813
Household income						
	race					
	2 Black Only	-.542	.010	0.000	-.562	-.521
	3 American Indian	-.556	.020	0.000	-.595	-.517

	and Alaska				
	4 Asian Only	.047	.011	0.000	-.069	-.024
	_cons	11.202	.003	0.000	11.196	11.209
Mental health condition					
	education	-0.026	0.002	0.000	-0.015	-0.009
	Household income	0.138	0.000	0.000	0.000	0.000
	race					
	2 Black Only	0.219	0.012	0.000	0.190	0.236
	3 American Indian					
	and Alaska	0.202	0.022	0.000	0.150	0.236
	4 Asian Only	0.292	0.013	0.000	0.254	0.304
	_cons	16.066	0.018	0.000	15.977	16.155

95% confidence level*

Table 7. The mediation model of education, household income and age

	Coefficient	Standard Error	P value	95% confidence interval	
Education					
Age	-0.006	0.001	0.000	-0.007	-0.004
_cons	12.069	0.029	0.000	12.012	12.127
Household Income					
Age	.005	.0002	0.000	.005	.006
_cons	10.879	.011	0.000	10.857	10.901
Mental health condition					
Education	-0.009	0.003	0.004	-0.006	0.000
Household income	0.101	0.000	0.000	0.000	0.000
age	0.009	0.000	0.000	0.009	0.010
_cons	16.024	0.016	0.000	16.965	17.051

95% confidence level*

Table 8. The mediation model of education, household income and gender

	Coefficient	Standard Error	P value	95% confidence interval	
Education					
Gender					
1 Male	0.093	0.015	0.000	0.062	0.123
_cons	11.771	0.010	0.000	11.751	11.791
Household Income					
Gender					
1 Male	.276	0.006	0.000	.265	.288

_cons	11.020	0.003	0.000	11.012	11.028
Mental health condition					
Education	-0.012	0.005	0.000	-0.007	-0.001
Household income	0.091	0.004	0.000	0.000	0.000
Gender					
1 Male	0.241	0.007	0.000	0.228	0.254
_cons	16.482	0.044	0.000	17.340	17.412

95% confidence level*