The Influence of Chronic Illness on Mental Health: Does the Age of the Patient Matter?*

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ABSTRACT

It is no secret that battling a chronic illness can impact an individual's mental health, all while simultaneously harming their physical health. Although many say that this connection between chronic illness and mental health is obvious, we may still wonder whether chronically ill young adults have a harder time coping with chronic illness and mental health. Does the age of the chronically ill patient matter? Are chronically ill young adults more likely to suffer from poor mental health than older chronically ill individuals? I hypothesize that the older the chronically ill patient, the better their reported mental health will be. To test this assumption, this study analyzes data from the 2010 National Health Interview Survey (NHIS) using a subset of 4,257 chronically ill individuals aged 18 through 85. I Control for race, labor force status, and sex, the results from the analyses align with findings from previous literature (Fässberg et al. 2016; Gallant, Spitze and Grove 2010). The findings support my age hypothesis as well as also provide insight on how not being in the labor force also affects chronically ill patient's mental health.

Living with, and trying to manage, a chronic illness can impact an individual's mental health, all while simultaneously harming their physical health. The relationship between chronic illness and mental health has been studied by numerous researchers over the past few decades. Unanimously, within this research it seems that a patient's mental health often gets put on the back burner during the received treatment for their illness and also throughout the duration of their health journey. Often, neither emotional health nor mental health are prioritized while trying to mitigate the physical effects of the chronic illness. As a result, chronically ill individuals are not getting the proper mental health treatment they need for the issues that arise while they are battling chronic illness. Uncovering the harsh realities of how age may play a key role in the mental health of those whom are chronically ill, will allow us to explore ways in which prioritizing mental health for long-term illness patients can be standard procedure.

To many, it may appear obvious that battling a chronic illness could be correlated to poor mental health, but many fail to realize that the mental health effects of chronic illness can be equally as debilitating, if not more than, the physical effects of a chronic sickness. While this is true, not every long-term illness patient suffers from the same mental health issues. Why are some chronically ill patients less drained from their ailments and more mentally stable than others? This is an important question to ask as it is essential to target the individuals who seem to struggle the most under these circumstances in order to be able to efficiently help them and potentially stabilize their mental health. This leads to the question of, what group of chronically ill individuals tend to suffer the most from poor mental health problems? If we were to separate patients by their age and view mental health by age group, it may be clear that young adults suffer more than their older counterparts. In fact, young adults may suffer the most out of chronically ill individuals. This may be because children are more optimistic and perhaps even

live in “ignorant bliss” while dealing with sickness. Without being totally aware of what it means to be chronically ill, children may not feel it is serious or even something to worry about. Children are also still being socialized; therefore, it may be seen more as a norm for them to be “sick” if they grow up around other children whom have similar health backgrounds as them. It becomes what they are used to. Whereas, young adults grow up to see chronic illness and sickness as more of a taboo. Some theoretical frameworks that may help support these claims are, social stigma, social self, and social constructionism. Opposingly, older chronically ill patients may feel that they have lived most of their lives already so the diagnoses and harsh reality of sickness may not impact their future. They are more used to long term illness and their age and health impacting their everyday life. I hypothesize that the older the chronically ill patient the better their reported mental health will be.

Exploring the connections between a subset of people who are chronically ill, excluding anyone under 18, and the stability of their mental health will help to bring awareness to the lack of treatment and care. Derived from theory and personal experience, I believe older chronically ill patients will report better mental health than their younger counterparts.

THEORETICAL FRAMEWORK

Social Stigma

Traditionally, renowned sociologist Erving Goffman (1963) describes stigma as an individual having or partaking in something that is discredited or frowned upon by society and being rejected because of it. Stigma can be described as a "mark" that tells others that an individual is different from everyone else in a negative light. Throughout multiple studies it becomes obvious how the stigma behind chronic illness can lead to a decline in mental health. Social stigma has also been described as, seeing an individual as ‘less than fully human’ and how

this can drive people to become social actors (Pescosolido 2013; Tuntiya 2016). They start to feel compelled to perform for their social image due to the recurring stigma. Age can impact how people think about chronic illness, and how they feel about stigma. Young adults may be more affected by stigma than elders as they are more likely to care about what those around them think. Elders are less likely to feed into stigma or be emotionally and mentally affected by it. The relationship that an individual has with society and how they believe they are viewed can have a massive effect on their mental health.

Social Self

George Herbert Mead's theory of social self includes both social image and self-awareness. Social image relates to how an individual believes they are perceived by society. This fits well together with social stigma. Self-awareness as a theme, in the case of my study, is conscious thought and understanding of one's feelings, diagnoses, and abilities (Mead 1934). Combining both social image and self-awareness creates social self. Social self can be defined as a person's identity or "self" being sculpted by observing and interacting with the world. Social self relates to my hypothesis because it proves that individuals are shaped by their surroundings and the people around them. Individuals feed off of one another and similar life experiences. This may result in chronically ill individuals may view chronic illness the same way that those around them view chronic illness.

Social Constructionism

Social constructionism is essential to thinking like a sociologist and utilizing new perspectives in the world. Social constructionism is the theory that originated in Berger and Luckmann's piece, *The Social Construction of Reality* (1966). It is the idea that things are given meaning based on a perceived reality that society has based off of shared assumptions. Social

constructionism is extremely relevant to chronic illness and mental health. Some researchers even say that illness itself is socially constructed (Conrad and Barker 2010). They emphasize that society responds to certain illnesses differently than others. Some illnesses and diseases are viewed to be more "serious" or "tragic" than others. This may lead to individuals feeling discouraged about their illness and having their experience discredited based on how others perceive it and discuss it in the social world.

LITERATURE REVIEW

The relationship between chronic illness and mental health has been studied by a plethora of sociologists (Bister 2018; Idler and Angel 1990; Keyes 2005; Nowakowski 2016; Merkens 1989; Royer 1995; Schnittker 2005). Most researchers tend to believe that there are many different factors within an individual's life that can influence their relationship with their chronic illness and how it affects their mental health. Some studies seem to focus on the close link between specific symptoms, the functional limitations that they bring and how they can affect mental health (Bister 2018; Clarke et al. 2011; Snowden et al. 2010; Zimmermann, Stuckelberger and Meyer 2006; Ward and Bissell 2011). While specific symptoms and the limitations that they bring may affect mental health, there are multiple things that may be responsible for the decline of a chronically ill person's mental health. The most compelling previous research suggests that the stability of these patient's mental health could be dependent solely on the age of the patient. Some themes within medical sociology emphasize how the individual's relationship with society can cause vast changes which can have a strong effect on their mental health.

Children

Although information on young children's mental health is hard to come by, some studies have been able to focus primarily on youth and how their mental health is affected while dealing

with chronic illness (Alan, Guzman, and Aparicio 2017; Pinquart 2013). These findings offer support to the idea that a significant portion of youth experience mental health problems related to their chronic health conditions. Additionally, evidence provided shows that younger patients with chronic illnesses have lower self-esteem than healthy individuals or test norms. These studies also found that treatments are available to address and reverse some of these mental health issues; however, there are barriers that prevent these youth from getting the treatment they need.

Young Adults

Across multiple studies, there has been evidence that lack of control creates feelings of distress among chronically ill young adults. "The young adults in the three studies often talked about their experiences of growing up with a chronic illness in terms of whether they felt they controlled their condition, or it controlled them" (Heaton 2016:8). Whether or not the young adults believed they had a good grip on their condition mattered significantly in their attitude and perceived mental health. Young adults would use how often they got flare-ups and laboratory test results as indicators of how well they were managing their condition. It was also very important to them if they had any significant help from others during the course of their treatment.

Isolation

Young adult chronic illness patients are often forced to be exposed to isolation early in their life. Isolation occurs when an individual is completely, or almost completely, without contact from society. Researchers discuss how the inability to find a stable support system may lead to social isolation (Bury 1991; Fässberg et al. 2016; Finlayson and Cho 2011). It may be hard for young adults to confide in someone or find someone that they believe can truly

understand them. Social isolation is difficult to deal with, but it is especially hard for young adults. In a lifetime, most people are forced to experience severe isolation, but it usually occurs when they are older. The same researchers that discuss the difficulties of dealing with social isolation as a chronically ill patient discuss how physical illness and functional disability are more common in late life, which leads to isolation. At this stage in their lives, elders are more equipped to deal with isolation and they may be used to it rather than having it abruptly occur for chronically ill young adults.

Elders

Society has made it so that when we think of a chronically ill person, we often imagine an older, sickly looking, individual. While not all chronically ill patients fit this image, we may think this way for a reason. A majority of older adults in the United States are living with at least one chronic illness and navigating it to the best of their ability (Fässberg et al. 2016; Gallant, Spitze and Grove 2010). Chronic illness is less stigmatized for older people considering it is more common for their age. They are less likely to be subjected to the emotional and mental strain that comes with the stigma around chronic illness. Supporting the claim that elders have more "life experience" and wisdom to deal with these ailments, in both Leigh et al. (2016), and Moe et al. (2013), there are associations between chronic disease and the various levels of mental health in older aged patients, but there is no evidence of a large decline in mental health for chronically ill elders during the period right before death. This could insinuate that a decline in mental health is less likely the older a patient is. This could be contributed to the fact that older patients feel as though they have mostly lived a fair life, being of old age, and value life differently. These studies also found that very old women and very old men that are battling chronic illness may be mentally and physically vulnerable, but they also have a significant

amount of inner strength to deal with these vulnerabilities. This inner strength can be contributed to their experiences of independence, integrity, and enjoying life. This type of strength could also determine their outlook and feelings on being chronically ill. Additionally, the older people tend to have a more optimistic outlook on their quality of life.

The relationship between chronic illness and mental health has been an interesting topic in the sociology of health and medicine. The sociological research that concerns chronically ill individuals and their mental health has pointed to many different areas which need to be further examined and explored. While a lot of research focuses on individuals and the symptoms that their chronic illness brings, others focus on the age of the patient and how that may be responsible for the decline of a chronically ill person's mental health. (Bister 2018; Clarke et al. 2011; Snowden et al. 2010; Zimmermann, Stuckelberger and Meyer 2006; Ward and Bissell 2011). It is important to acknowledge how the individual's relationship with society can cause major changes in one's life which can strongly effect their mental health.

METHODS

Data

The data set I analyzed in this study is the National Health Interview Survey (NHIS) that was collected in 2010. The National Health Interview Survey is a survey collecting information on the health, health care access, and health behaviors of the civilian, non-institutionalized U.S. population, with digital data files available from 1963 to present. The NHIS uses households and individuals as their unit of analysis. This study focuses on a subset of chronically ill individuals aged 18 through 85. I created this subset by selecting individuals that claim to be limited by a chronic illness. After excluding all missing data, my sample size was reduced to 4,257. For more

information on how the data were collected, visit https://www.cdc.gov/nchs/nhis/nhis_2010_data_release.htm.

Variables

My independent variable for this study is the original "age" variable assessed in the NHIS of 2010. The original age variable reports the individual's age in years since their last birthday. I used individuals that are limited by a chronic condition as my subset while also making sure to exclude those under the age of 18. This was able to provide me with chronically ill patients that fit the age requirements to be included in my hypothesis.

As for my dependent variable, I have measured the respondents general mental health using a variable that measures the respondent's self-reported state of their mental health. The question respondents were asked is, "In general, how would you rate your mental health, including your mood and your ability to think?" I reordered the response set to make the index scale measure excellent mental health rather than poor. After this recode, the response options provided for this question are poor (1) fair (2), good (3), very good (4), and excellent (5).

Lastly, I controlled for employment status, respondent's race, and respondent's sex. The NHIS asks multiple questions to achieve these answers from their respondents. To measure employment status the survey asks, "The next few questions are about employment status. Which of the following [fill: were you/was ALIAS] doing last week?" The original responses for this question were, "1 Working for pay at a job or business," "2 With a job or business but not at work," "3 Looking for work," "4 Working but not for pay, at a family-owned job or business," "5 Not working at a job or business and not looking for work," "7 Refused," and "9 Don't know." I omitted responses seven and nine as well as all missing data. I recoded the responses and made the outcome dichotomous to identify if the respondents were either in the labor force

(0) or not in the labor force (1). I was only interested in using my all of my control variables as dummies.

For respondents race I used a race variable that asks, “What race or races [fill1: Do you/Does ALIAS] consider [fill2: yourself/himself/herself] to be?” There original responses for this question were, “01 White,” “02 Black/African American,” “03 Indian (American),” “04 Alaska Native,” “05 Native Hawaiian,” “06 Guamanian,” “07 Samoan,” “08 Other Pacific Islander,” “09 Asian Indian,” “10 Chinese,” “11 Filipino,” “12 Japanese,” “13 Korean,” “14 Vietnamese,” “15 Other Asian,” “16 Some other race,” “97 Refused,” and “99 Don't know.” I omitted responses 97, 99, and missing data and dummied this variable to be either Non-White (0) or White (1).

To control for the respondent’s sex I used a sex variable from the 2010 NHIS. The question asks [Are you/Is ALIAS] male or female? The original responses were, 1 Male, or 2 Female. I recoded this to Men (0), and Women (1).

FINDINGS

Univariate Results

Table 1 reports the means and standard deviations. The mean for the independent variable, age, tells us that the mean age of respondents is about 60. While this may seem a bit old for an average age of survey respondents, it is important to remember that I am using a chronically ill subset of people so this age seems normal. The standard deviation for age is approximately 17, meaning that most respondent’s age falls within one standard deviation of the mean, 43 and 77 years. The mean for the dependent variable, mental health, tells us that on average respondent’s reported mental health is good. The standard deviation for mental health is about 1. This indicates that most respondents fall between fair and very good. The means for my

three control variables all tell us that about 72 percent of respondents are white, most respondents are not in the labor force, and that close to 60 percent of the respondents are women. Figure 1 shows the frequency distribution for age. This figure helps visualize the means and standard deviation shown in Table 1. The histogram shows that the average age of respondents is around 60. It also provides an approximate number of respondents that are a certain age. Figure 1 also shows that close to 400 respondents are 85 years old which is unique for most studies.

Table 1 about Here

Figure 1 about Here

Figure 2 shows a bar graph of my dependent variable, mental health. It shows that a majority of respondents report good mental health on the self-reported mental health index.

Figure 2 about Here

Figure 3 and Figure 4 both show the control variables, race, labor force status, and sex. Figure 3 shows that about 72 percent of respondents are white. Figure 4 shows that most respondents are not in the labor force, or actively searching for jobs. We may be able to assume that this is due to their health status and inability to work with their chronic illness. Figure 5 shows us that close to 60 percent of the respondents for this research are women

Figure 3 about here

Figure 4 about here

Figure 5 about here

Bivariate Results

Correlation coefficients were run between all pairs of variables to determine if there are or are not statistically significant relationships between independent, dependent, and control variables. As previously discussed, the sample size for my research is 4,257 (*N =4,257).*

Table 2 shows the correlation coefficients for all of my variables. As displayed in Table 2, there is a statistically significant relationship between the age of the respondent and their self-reported mental health. It is a positive and weak relationship which means that the older the respondent the better their self-reported mental health. This coefficient is especially helpful when interpreting my results as it proves to support my original hypothesis. Additionally, there are a few more relationships between variables that are statistically significant. The relationship between the respondent's race and their self-reported mental health, and the relationship between the respondent's race and age are both positive and very weak correlations. Although they have small *r*'s, (.050 and .096), they are both statistically significant because of the large *N* and observed *p* value. This can be interpreted to mean that if the respondent is white, they will be more likely to rate themselves higher on the self-reported mental health index and they are also more likely to be older than non-white respondents.

Table 2 about here

There is also a statistically significant relationship between the respondent's sex and their age. It is a positive but very weak relationship. This means that if the respondent is a woman, they are more likely be older in age. The last three variable relationships that are statistically significant are between respondent's labor force status and their self-reported mental health, respondent's labor force status and their age, and respondent's labor force status and their sex. The relationship between labor force status and self-reported mental health is negative and weak. This indicates that if the respondent is not in the labor force, the respondent is more likely to rate themselves with poor mental health. For the relationship between respondent's labor force status and the respondent's age, there is a positive and moderate correlation. This informs us that if the respondent is not in the labor force, they are likely to be older in age. The last statistically

significant relationship between variables is between labor force status and respondent's sex. It is a positive and weak correlation meaning that if the respondent is not in the labor force, they are more likely to be a woman.

The bivariate analysis that is shown in Table 2 also shows us which variable relationships are instead, not statistically significant. Respondent's sex and their self-reported mental health, respondent's race and their sex, nor the respondent's labor force status and their race are statistically significant at the bivariate level.

Multivariate Results

As displayed in Table 3, the regression equation shows that 4.4 percent of the variability in mental health can be explained by age, sex, race, and labor force status (R^2 = .044). This regression equation is statistically significant at the .01 level with a *F*-value of 48.664. Table 3 shows that both the independent variable, age, and one of the control variables, not in labor force, are statistically significant. Because age and not in labor force are the only statistically significant variables, these are the coefficients we will be paying particularly close attention to. For age, the unstandardized coefficient reveals that for every additional year older a respondent is, they will score .013 points higher on the five-point mental health index. For not in labor force, the unstandardized coefficient reveals that if the respondent is not in the labor force, they will score .442 points lower on the mental health index. Age (β = .194) is the strongest predictor of self-reported mental health followed by labor force status (β = -.165).

At the bivariate level, race is statistically significant whereas at the multivariate level it is not. These results are exceptionally important as they support my hypothesis that the older the chronically ill patient the better their self-reported mental health will be.

Table 3 about here

DISCUSSION

This study was meant to examine the relationship between the age and the mental health of chronically ill individuals. The findings from the bivariate and multivariate analyses support the hypothesis that the older the chronically ill respondent the better their self-reported mental health will be. In both the bivariate analysis, Table 2, and the multivariate analysis, Table 3, there are statistically significant relationships between the age of the respondent and their self-reported mental health, and also between the respondent's labor force status and their self-reported mental health. While this provides evidence that my age hypothesis is correct, it also provides interesting insight, and perhaps causation, between labor force status and mental health. It poses an interesting finding that if the respondent is not in the labor force, they are more likely to record poor mental health on a five-point scale. According to the regressions within this study, the predictors of poor mental health are age and labor force status.

These results do coincide with findings from pre-existing literature and they also manage to highlight some of the theoretical frameworks used in this study (Fässberg et al. 2016; Gallant, Spitze and Grove 2010). The results of this study suggest that older chronically ill patients report better mental health than their younger counterparts and that Goffman's theory of social stigma may be a leading reason as to why. Literature goes on to discuss how and why chronic illness is less stigmatized for older people mostly focusing on how chronic illness is more common for their age group; therefore, less stigmatized (Fässberg et al. 2016; Gallant, Spitze and Grove 2010). Elders may be less likely to suffer emotionally and mentally from the stigma around chronic illness. This could be due to their inner strength from previous life experiences and greater levels of independence.

By combining Berger and Luckmann's theory of social constructionism and Mead's theory of social self, we conclude that individuals are shaped by both their surroundings and also the people around them. We also learn that things are given meaning based on a perceived reality that society has created. If we apply these theoretical frameworks to the results of this study, we can see a potential reason to why chronically ill elders suffer less from emotional strain and poor mental health problems. Older chronically ill individuals may not be as easily influenced by those around them due to more life experience and an ability to be unbothered or phased by other opinions.

CONCLUSION

This study explored chronic illness and its ability to affect an individual's mental health. Using a sample of 4,257 chronically ill individuals aged 18 through 85, I analyzed data from the 2010 National Health Interview Survey (NHIS) to investigate whether chronically ill young adults are more likely to suffer from poor mental health than older chronically ill individuals. Does the age of the chronically ill patient matter? I hypothesized that the older the chronically ill patient the better their reported mental health would be. I Controlled for race, labor force status, and sex. The bivariate correlations confirm my hypothesis, that there is a statistically significant relationship between the age of the respondent and their self-reported mental health. The older the respondent the better their self-reported mental health will be. The results from the analyses also align with findings from previous literature and are statistically significant (Fässberg et al. 2016; Gallant, Spitze and Grove 2010). These findings are able to support my age hypothesis as well as also provide insight on how not being in the labor force also affects chronically ill patient's mental health.

This research emphasizes chronic illness' ability to disable individuals not only physically but mentally as well. Taking these findings into consideration, and using the information they provide, can potentially help future chronically ill patients get the proper attention and mental health care that they are usually denied. As a result of young adults struggling more with poor mental health, new medical policies can be enforced in order to try to mitigate this harsh reality. Potential solutions or helpful practices could include support groups that can link chronically ill patients of various ages so that elder's life experiences and advice can be shared. Additionally, more care, attention, and mandatory attentiveness to younger patients by physicians, family, friends, and colleagues may also help to reduce mental health strain.

Limitations

While the relationship between age and mental health is statistically significant and the results of this study confirm my hypothesis, there are some limitations that are important to acknowledge. When building my subset, I had to use a variable that asked respondents if they are "limited by a chronic illness" as there was no variable that asked respondents if they simply have a chronic illness. I then created the subset based on respondents who only answered "Yes" to being limited by a chronic condition. The word "limited" may imply that these respondents already feel burdened by their illness and this may sway their response to the self-reported mental health question. Additionally, this study is limited by lack of general knowledge about the respondent's and their health journey. We do not know when these individuals were diagnosed with their chronic illness or how long they have had it as these variables were not available through the 2010 NHIS.

It is also important to note that we are unaware why respondents may report they are not in the labor force. The respondents may not be in the labor force as a result of age, their illness, or even their mental health. While age, not in labor force, and poor mental health all seem to be correlated, the results of this study do not prove causation. It may be possible that these individuals are not in the labor force because their mental health is so poor. Being unable to identify the causal order of the labor force question is a limitation for most of the statistically significant relationships in this study.

Future Research

Future research could study how self-reported mental health changes during one chronically ill individual's life course. As stated in the limitations section, we do not know when these individuals were diagnosed with their chronic illness or how long they have had it. If future research could look at the course of one patient's life from early childhood to adulthood it may provide more information on the mental health of the chronically ill. A longitudinal study would allow researchers to closely examine if and when a shift takes place in the patient's lifetime.
It would be interesting to examine if physical and visual aspects of certain chronic illnesses would change the results of this study. Perhaps looking at the difference in the mental health of those suffering from invisible chronic illnesses to those suffering from more physically apparent chronic illnesses. As chronic illness research is expanded, these mental health findings should act as a steppingstone in the efforts to work towards helping patients.

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Table 1. Means, Medians, and Standard Deviation for Variables (N = 4257)

Variable	Mean	Standard Deviation
Age	60.38	16.690
Mental Health	3.11	1.122
Women	0.59	0.492
White	0.72	0.451
Not in Labor Force	0.78	0.418

Table 2. Bivariate Correlation $N = 4257$

	Age	Women	White	Not in Labor Force
Mental Health	1.34*	-.018	.050*	-.096*
Age		.088*	.096*	.363*
Women			-.010	.058*
White				-.013

*$p < .01$

Table 3. Regression of Mental Health on All Variables

Variable	*b*	β
Age	.013	.194**
Women	-.058	-.025
White	.072	.029
Not Labor Force	-.442	-.165**
Constant	2.654	

$R^2 = .044$; $F(4,4252) = 48.664$; $p < .01$

**$p < .01$

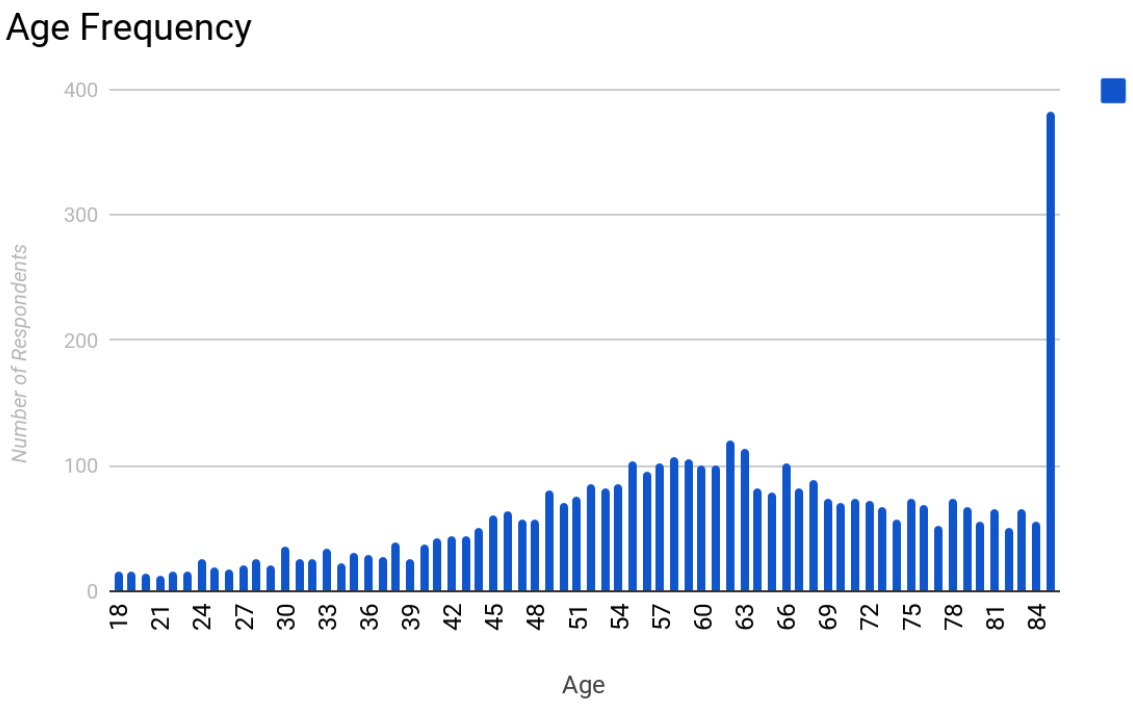

Figure 1. Histogram of Age

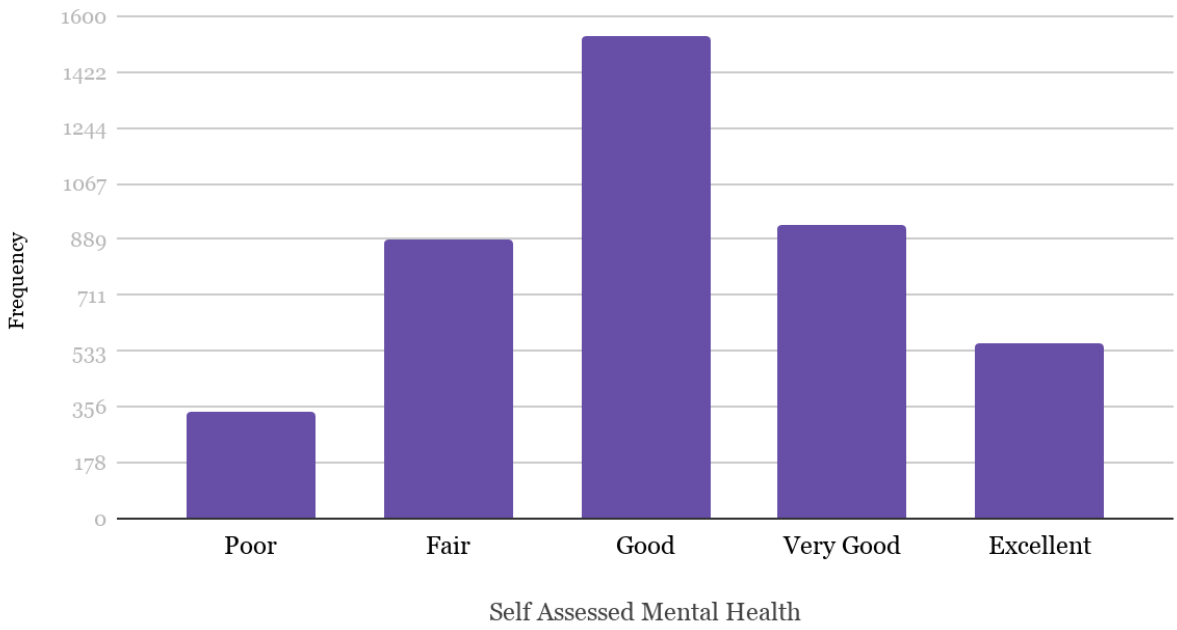

Figure 2. Bar Graph on Self Assessed Mental Health

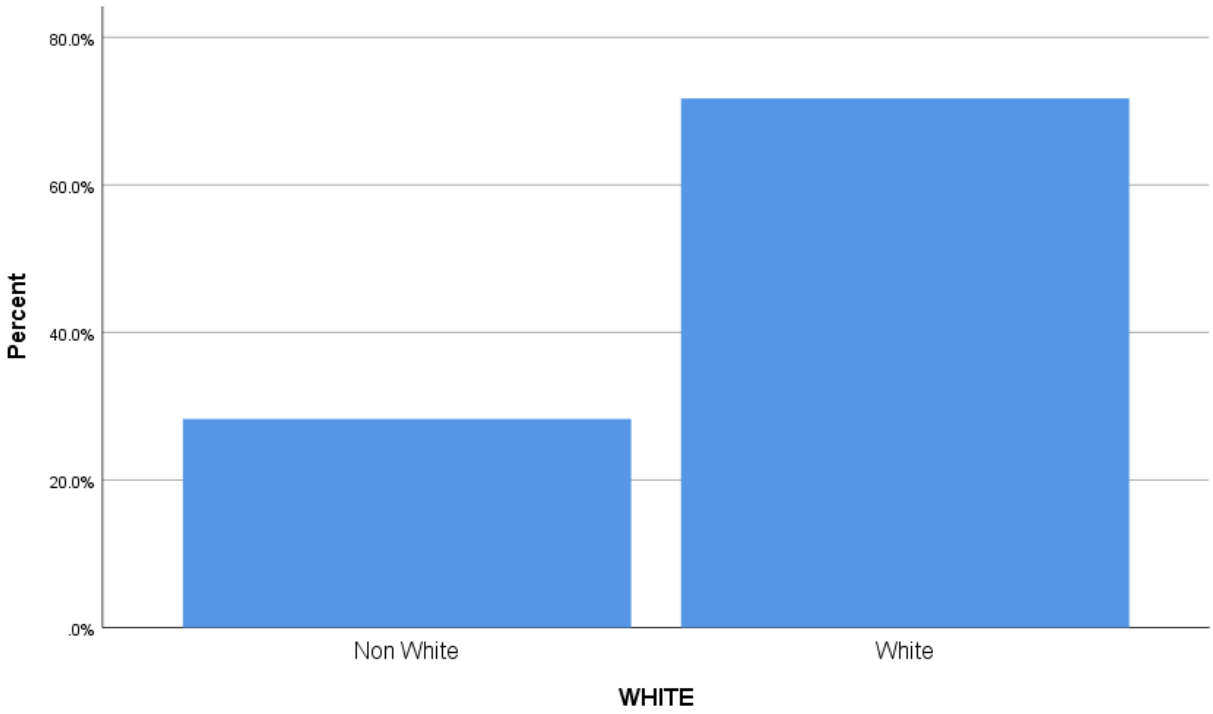

Figure 3. Bar Graph on Race

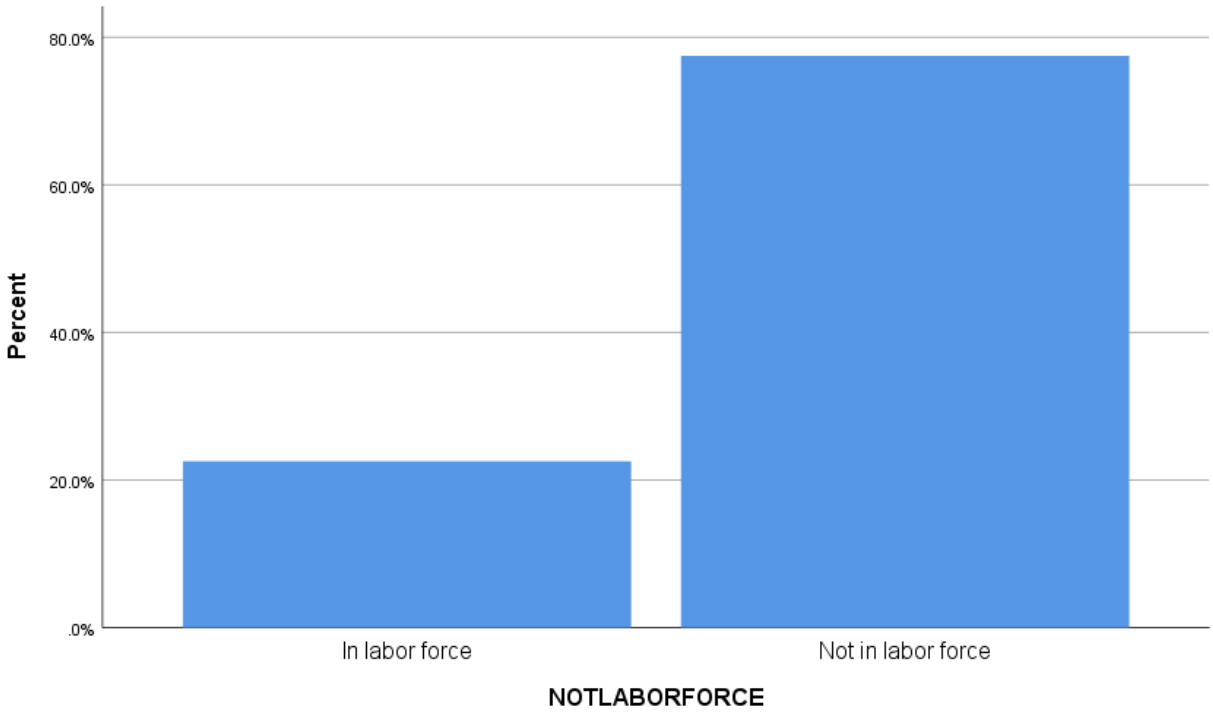

Figure 4. Bar Graph on Labor Force Status

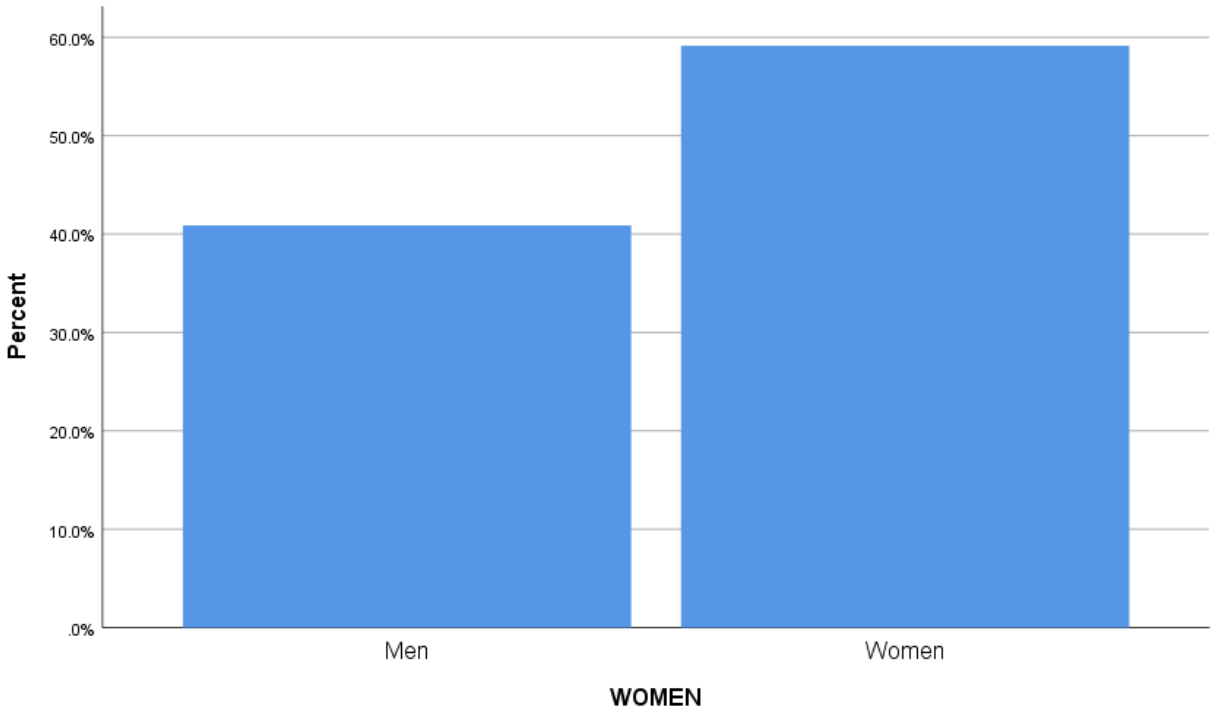

Figure 5. Bar Graph on Sex